## élan

- Douglas *élan series* Data Line switches are an attractive group of lighting control switch modules that are designed to use 'Decora' Style switch plates. The *élan series* Data Line rocker switches have ON and OFF LED indicators and can be ganged together to form compact switch stations.

- Up to 4 switches can fit into a single gang plate. If additional switches are required, use multi-gang plates with the appropriately sized switch modules. A complete range of stock cover plates are available in stainless steel or white 'screwless' plastic for all sizes up to 6 gangs.

- Connect Douglas *élan series* Data Line switches in a Douglas Digital network in a 'Serial Bus' or 'Free Topology' configuration to control relays or groups located anywhere in the network.

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## PART No.

**WNS-2301**
Data Line
1-Switch Module

**WNS-2302**
Data Line
2-Switch Module

**WNS-2303**
Data Line
3-Switch Module

**WNS-2304**
Data Line
4-Switch Module

## DESCRIPTION

- LED indicating rocker switch to control individual Douglas relays and groups.

- LEDs show status of the programmed relays or groups. Red indicates ON (any of the group's relays are ON) and green indicates OFF (all of the group's relays are OFF).

- The *élan series* Data Line Switches control relays anywhere within a Douglas W-2000 Network.

- Each switch module has two screw terminals for power (24VAC, 15ma) and two screw terminals for the data signal (TP/FT-10 Lontalk).

- The WNS-2301, WNS-2302, WNS-2303 and WNS-2304 Switch Modules all mount into a standard single-gang back box. Switch modules can be ganged together to make up larger switch stations.

- Each switch within a module may be individually custom labeled.

- Wall box and plate mounting bracket come as one piece. Switch module has clip tabs for mounting screwless plates.

- Maximum power consumption for the Switch Modules are:
  - WNS-2301: 27mA
  - WNS-2302: 28mA
  - WNS-2303: 29mA
  - WNS-2304: 30mA.

- **The WNS-2300 Switch Module can be set for:**

SELF CONFIGURED DOUGLAS SYSTEMS
Up to 20 unique switch module addresses can exist in a self-configured system. Set the address with the dials on the back of the switch module. If 2 switch modules have the same address, they will switch in parallel.

EXTERNALLY CONFIGURED SYSTEMS
For networks controlled by a Douglas WNP-2150 Network Manager, the Switch Module addresses are set and programmed using the WNP-2150.

For identification, the switches can receive a 'Wink' command from the WNP-2150 which will cause the switch to toggle the LEDs from red to green for up to 5 minutes.

## DIMENSIONS AND MOUNTING

- Switch module available in 1-, 2-, 3- or 4-button configurations. All have the same dimensions, as shown below.
- Mount to standard gang box. Switch modules can be ganged for larger stations.

gang box

4.375  2.56  3.25  3.81

label slot(s) on side

1.43   1.25   1.87

- Stainless steel plate mounting

Clip off Mounting Tabs
Wall Box
Switch Module
Stainless Steel Cover Plate

- Plastic screwless plate mounting

Mounting Tabs
Wall Box
Switch Module
Snap-on Plastic Cover Plate

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**DOUGLAS**
lighting controls

B-3.9,10,11,12,13,14 élan Switches

## Installation

- Connect 24VAC and the LonWorks Data Signal to the back of each switch module and install modules in a standard wall boxes.

- Each switch module, as a device, must have a network address assigned.

  SELF CONFIGURED NETWORKS
  A self-configured network can have up to 20 switch module addresses, each a 2-digit number from 60 to 79. Set each address with the 2 rotary dials on the back of the module, as shown at the right. The left dial sets the first digit and the right dial sets the second digit. If two modules have the same address, they will operate in parallel.

  EXTERNALLY CONFIGURED NETWORKS
  The switch modules, once they are properly connected within the network, are assigned addresses by either the Douglas WNP-2150 Network Manager or, if installed in another manufacturer's LonWorks system, assigned addresses by that system.

## Network Wiring

- There are 2 methods that can be used to wire a Douglas LonWorks network having Data Line Switch Modules, as shown at right.

- Most network wiring faults occur at switch stations. A free topology network with the relay panels' data signal connected together and the switch leg emanating from a panel creates the most reliable network. Should any switch leg be disconnected, panel network integrity is retained.

- If a longer data signal is required for a network, use the bus topology method of wiring. Be sure to carefully document how the bus topology is laid out. Use a diagram similar to that shown at right. Ensure that connections are properly made.

- When wiring switch modules, always connect cable from switch modules to a relay panel. Avoid splicing switch modules to data lines that connect panels together.

## Programming

SELF CONFIGURED NETWORKS

1) Press the right (or 'ON') side of the button to be programmed. After holding the button for 7 seconds, the LED will go off, and then start toggling between red and green.

2) The network is now in program mode. Relay groups may be edited at the relay scanner/network node (WRS-2224/WNX-2624) combination. The relay LEDs on the scanner will display which relays are included in the switch's program. Use the relay buttons on the WRS-2224 to add/delete relays from the switch's group program.

3) To exit program mode and resume normal mode, press the switch being programmed until the LEDs stop flashing.

4) Repeat Steps 1-3 for all other buttons to be programmed.

5) If the network is left in program mode, it will revert automatically to normal mode after 15 minutes.

EXTERNALLY CONFIGURED NETWORKS

If the network is programmed by the Douglas WNP-2150 Network Manager, the WNP-2150 will assign a network address to each switch when it is installed. Then for each switch, create or select the group to be controlled by the switch.

If the network is programmed by any other manufacturer's LonWorks system, the switches are then addressed and programmed by that system.

### Address Setting Dials (Self-Configured Networks)

Module has 2-digit network address from 60 to 79 set by turning dials so that (▲) aligns with number

Set first digit (6 or 7) by turning this dial

Set second digit (0-9) by turning this dial



### Free-Topology Network

Maximum accumulated wire length: 500m (1600 ft)
Wire type: 4-conductor #16 Belden or equivalent
Single termination unit (WLP-2999) recommended in center



### Bus-Topology Network

Maximum length of bus: 2700m (8500 ft)
Wire type: 4-conductor #16 Belden or equivalent
Termination unit (WLP-2999) recommended at each end of bus



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## LonWorks Network Data

This information is provided for the benefit of system integrators who are integrating the WNS-2300 Switch Module into a system.

Note: The 20-switch address limitation for self-configured systems does not apply to externally configured systems.

To help with the integration process, LNS plug-ins are available.

### Functional Profiles

- Node Object Type: 0 (x1)
- Scene Panel Type: 3250 (x1)
- Switch Object Type: 3200 (1 for each switch in module)

### Network Variables

- *Nvi Group/NvoScene* for group activation
- *NviSceneFb* for group status feedback
- *NvoSwitch* for alternate hardware output method
- *NviSwitchFb* for alternate hardware feedback method

#### LonMark® Profiles

Scene Panel Object Type 3250

| 1 | nviSceneFb SNVT_scene |
| 1 | nviGroup SNVT_scene |

Mandatory Network Variables

| 2 | nvoScene SNVT_scene |

Switch Object Type 3250

| 1 | nviSwitchFb SNVT_switch |

Mandatory Network Variables

| 2 | nvoSwitch SNVT_scene |