Dialog System Overview	PART No.	DESCRIPTION	SPECIFICATION
	Refer to individual data sheets for part #'s and descriptions.	• All of the Dialog devices (relay drivers, dimming devices, switches, etc.) connect to a single, common pair of wires: the Dialog data signal.	**Power**

Input Devices

Input Devices consist of:
• Switches.
• Occupancy Sensors.
• Photo Sensors.
• Contact Input Units.

An Input Device can be set to:
• An individual relay (ON/OFF).
• An individual Dimmer (dim up/down).
• A group of outputs (ON/OFF, Dim Up/Down).
• A preset (scene).
• A mode (logic, e.g. Enable/Disable, timeout, quiet mode).

Outputs

• 256 Relay outputs.
• 256 Dimmer outputs.

Output Devices consist of:
• Relay drivers for Douglas relays.
• 0-10V Ballast controls.
• demandflex DS Ballast controls.

An Output Device can be set to:
• Activate individual and global presets.
• Activate individual and global photo control settings.

Lighting Control Unit (LCU):

• Generates the Dialog data signal.
• Stores lighting control properties.
• Stores and runs time schedules.
• Stores logging info.

Settings can be edited with:
• Built-in, touch screen interface.
• Web browser using built-in web server.
• Uploading data files using USB or web browser.

Interface connections:
• Dialog data signal.
• RS-485 for Multi LCU installations.

DESCRIPTION (continued)

• Data signal provides data and power for most Input devices and data to the outputs.

• The Dialog data signal is supplied by the Lighting Control Unit. Each lighting controller can host up to 256 outputs (ON/OFF and Dimming) and all of the input devices that control those outputs.

• Each input device (switch, occpancy sensor, photo sensor, contact input unit) is targeted to either an output address or to a collection of outputs that are addressed as groups or presets. More than one input device can be set to the same target.

• Input devices targeted directly to an output require no programming.

• Input devices targeted to a group or preset require programming. How presets and mode settings are to behave is also programmed. There are 127 groups, 512 local presets and 512 global presets.

• For systems that require a higher number of outputs, a multi-LCU system can be utilized.

SPECIFICATION

Power
• Most Dialog input devices do not require 24VAC. They draw their power from the 2 conductor data signal. Dialog devices installed in panels that *do* require 24VAC are the Lighting Control Unit and Relay Drivers.

• The Dialog data signal supplies 400mA of power for Input devices.

Communication
• Data signal is polarity insensitive. Recommended wire is 18AWG solid (standard LVT).

• Total wire length with no amplifier(s) is 4000ft (1200m), with the longest length not exceeding 1000ft (300m) from the LCU.

• To increase capacity or wiring length, use WAM-3190 500mA amplifier. Up to 3 amplifiers maximum per LCU.

Outputs
• Output modules are addressed: #.1, #.2, #.3, #.4...for a total of 256 addresses (64 x 4). Each address has independent control.

• Output devices available:
  - Relay drivers compatible with all models of Douglas 2-wire relays.
  - 0-10V output for 0-10V ballasts*
  - Field mountable 4 relay units.
  Physically seperate ballast and relay devices can be set to the same address.

Inputs Devices
• Dialog switches, occupancy sensors and contact inputs can be set to an individual address, group address, preset address or mode.

Environment (all components)
• Stationary, non-vibrating, non-corrosive atmosphere & non-condensing humidity.

• Ambient temp: +5°F to +120° F (-15° C to +50° C).

DOUGLAS LIGHTING CONTROLS

K24.11

SYSTEM DESCRIPTION

Lighting Control Unit (LCU)
• The Lighting Control Unit (LCU) is the source of the Dialog signal.
The Dialog signal combines the data signal and device power onto a single
pair of wires (standard 18AWG solid is recommended).

• Most input devices - Dialog switches, occupancy sensors and photo
sensors - do not require any other connection than the Dialog signal.

• Output devices also connect to the Dialog signal. Each output has a unique
address and a maximum of 256 outputs can exist for each lighting controller.

• The LCU stores all of the control settings such as control presets, time
schedules, demand response settings, etc.

• Changing the settings of the LCU is done via the built-in touch screen
interface or via access to the LCU's web server over TCP/IP connection.

All Input Devices (Switches, Occupancy, Contact Input)
• Can be assigned to a single address to control a single output (ON/OFF for
relays, Dim UP/DOWN for dimmers).

• Can be assigned to a group to control a collection of relays and dimmers
(ON/OFF, Dim UP/DOWN).

• Can be assigned to presets to either create a lighting scene or activate a
mode.

• There are 127 groups, 512 local presets, and 512 global presets.

Photo Sensors
• Can be assigned to 64 seperate local or global addresses.

MODE functions (optional)
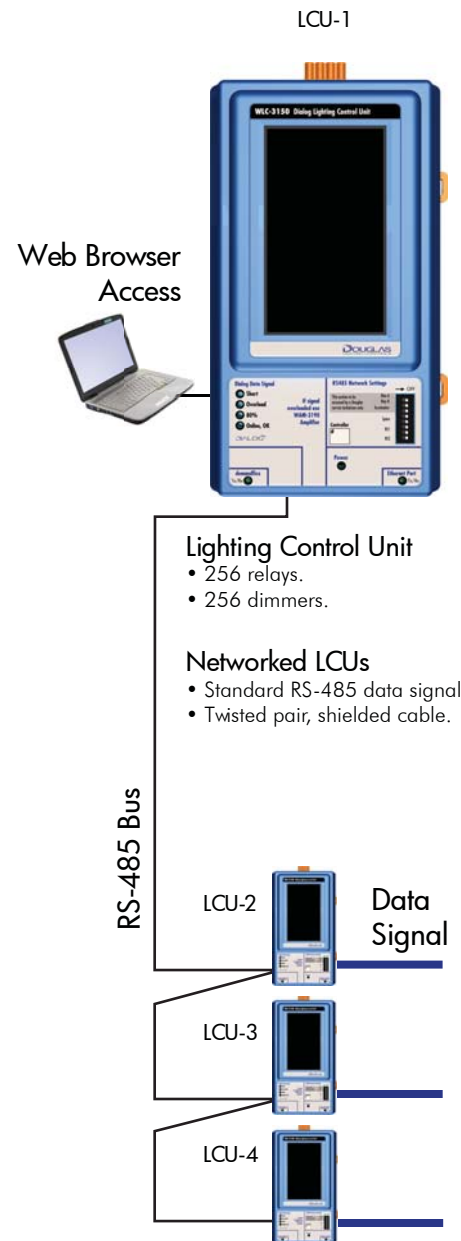• Up to 4 MODEs can be programmed for each group.
  Examples of MODE functions:
    1) Ignore occupancy sensors during the day, operate at night.
    2) Switches in public area don't work during daytime, but do at night.
    3) Switches work normally during the day, but at night they operate in
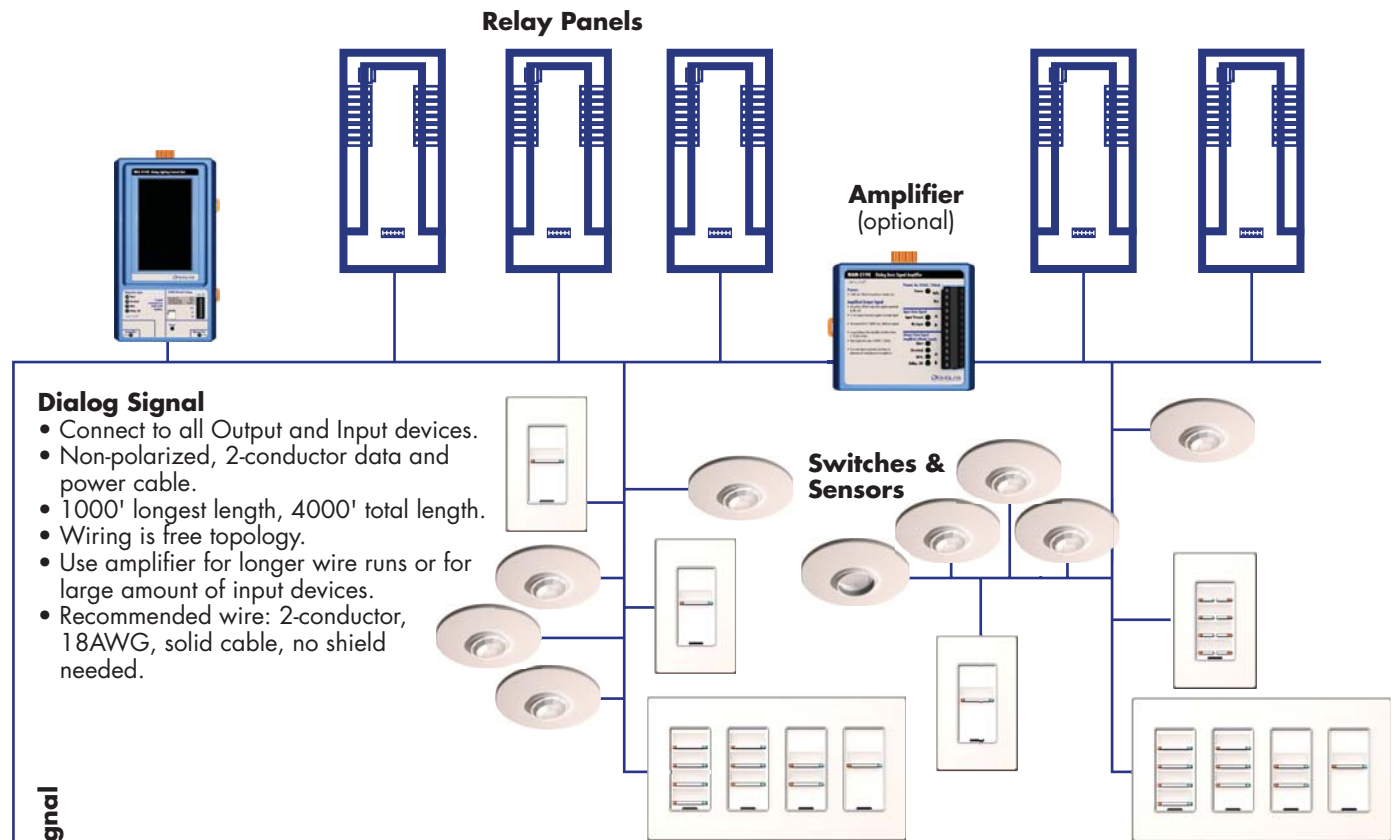   Timed-ON mode for automatic shut-off.

Time Scheduler
• Each LCU has a dedicated scheduler that can:
    1) Trigger and command individual addresses, group codes and preset
       addresses.
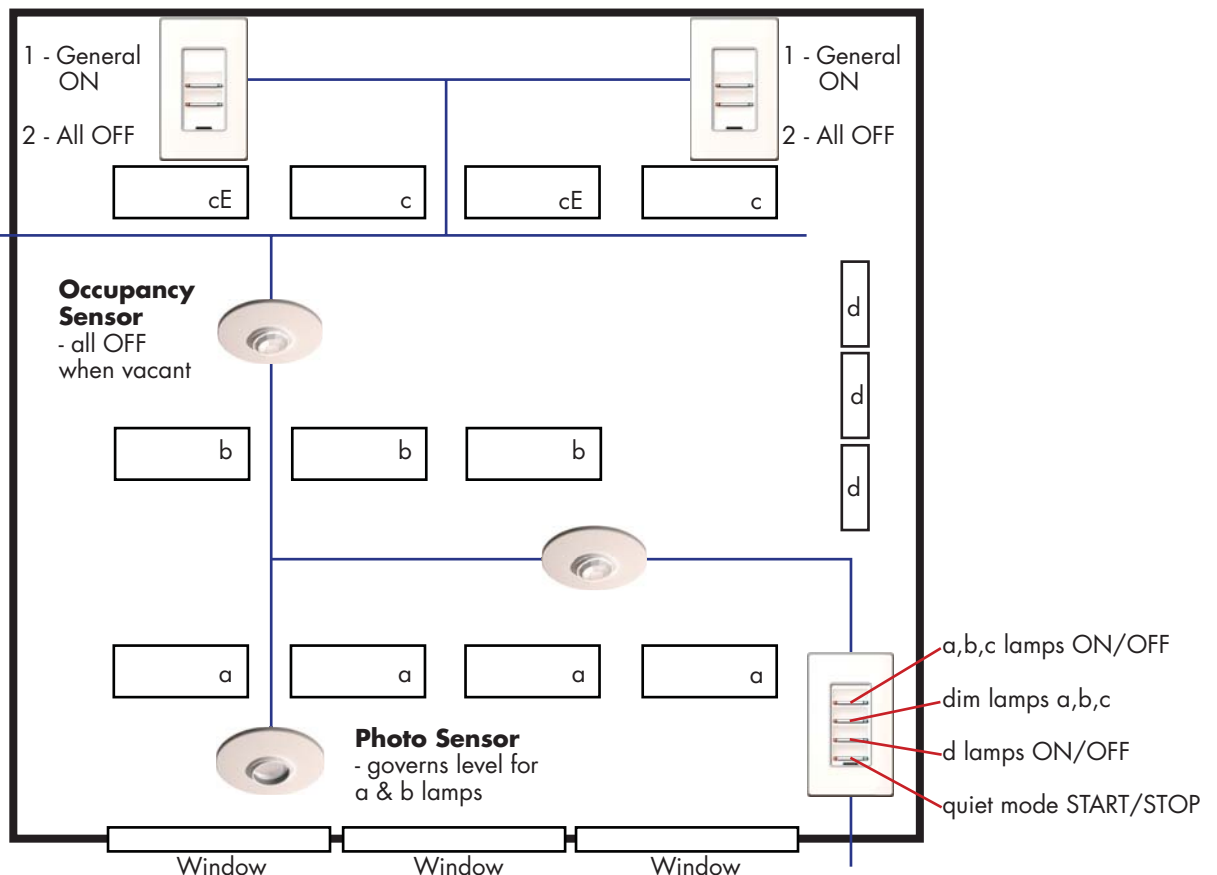   2) Activate modes and photo controllers.

Lighting Control Unit
• Built-in touch screen interface.
• Web browser utilizing built-in web server.
• Uploading data files using USB or web.

LCU-1

Web Browser
Access
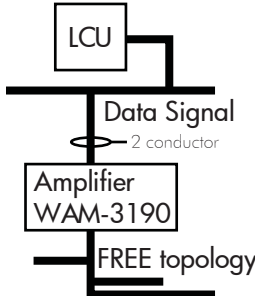
Lighting Control Unit
• 256 relays.
• 256 dimmers.

Networked LCUs
• Standard RS-485 data signal.
• Twisted pair, shielded cable.

RS-485 Bus

LCU-2   Data
         Signal

LCU-3

LCU-4

DOUGLAS
LIGHTING CONTROLS

Relay Panels

Amplifier
(optional)

Dialog Signal

- Connect to all Output and Input devices.
- Non-polarized, 2-conductor data and power cable.
- 1000' longest length, 4000' total length.
- Wiring is free topology.
- Use amplifier for longer wire runs or for large amount of input devices.
- Recommended wire: 2-conductor, 18AWG, solid cable, no shield needed.

Dialog Signal

Switches & Sensors

Classroom Example

1 - General ON

2 - All OFF

1 - General ON

2 - All OFF

| cE | c | cE | c |

Occupancy Sensor
- all OFF when vacant

| b | b | b |

| d |
| d |
| d |

| a | a | a | a |

a,b,c lamps ON/OFF

dim lamps a,b,c

d lamps ON/OFF

quiet mode START/STOP

Photo Sensor
- governs level for a & b lamps

Window   Window   Window

DOUGLAS
LIGHTING CONTROLS

K24.11

System Units

PART No.	DESCRIPTION
WLC-3150 **WIR-3110**	**Lighting Control Unit** • Stores and manages all system data and programming. • Supplies Dialog signal (400mA). • 256 relays. • 256 dimmers. • Connectivity to TCP/IP devices. **Infrared Setting Unit** • Set input devices target and address. • Set input devices properties. • Uses infrared.
LCU Data Signal 2 conductor Amplifier WAM-3190 FREE topology	**Data Signal** • 2 conductor, 18AWG solid is recommended. Twisted or shielded cable is not necessary. • FREE topology wiring. • 4000ft (1200m) total length, 1000ft (300m) longest length. Use amplifier (WAM-3190) to boost.

Output Devices

PART No.	DESCRIPTION
WRD-3408	**Relay Driver, 8 outputs,** • Compatible with all Douglas relays. • Connect to 24VAC & Data Signal. • Set address with DIP switches. • Adjacent units can plug into each other to minimize wiring.
WDB-3314	**Data line 0-10V ballast controller, 4 outputs** • 0-10V Dimming ballast module. • 4 Dimming address outputs. • Connect to 0-10V dimming ballasts (Maximum 50 ballasts per output).

Input Devices

PART No.	DESCRIPTION
WPS-3711 **WPS-3741**	**Photo Sensors** • Auto-ranging, 0 - 50,000 Lux • Set target with iR setting unit. **WPS-3711** Data line photo sensor, interior ceiling, iR set **WPS-3741** Data line photo sensor, exterior, iR set
WOC-3801	**PIR, ceiling mount, Occupancy Sensor** • Tilt and swivel lens. • Set target with iR setting unit.
WCI-3928	**Contact Input, 8 inputs, c/w 24 VDC, 500 mA supply** • 8 Contact Input Unit & 24VDC Power Supply. • Connect to 24VAC and data signal. • Configure for momentary or maintained contact signals. • Set target with iR setting unit.
WSW-35xx Series **WSD-3501** **WSK-3502** **WSW-3511** **WSW-3528**	**Wall Switches** • Fits Standard Decora switch plates. • Status and locator LEDs. **WSD-3501** Data line dimmer and switch, 1ch. **WSK-3502** Data line keyswitch, c/w pilot light. **WSW-3511** Data line switch - 1 gang, 1 button (1x1), iR set. **WSW-3512** Data line switch - 1 gang, 2 buttons (1x2), iR set. **WSW-3513** Data line switch - 1 gang, 3 buttons (1x3), iR set. **WSW-3514** Data line switch - 1 gang, 4 buttons (1x4), iR set. **WSW-3528** Data line switch - 1 gang, 8 buttons (2x4), iR set.

WNxx Series	**Cover Plates**
	 • **WN-80301, 9, 11, 12, 21**
	    Sizes: 1 to 5 gang.
	    Plastic cover plate.
	    Invisible mounting screws.
	
	 • **WN-97401, 2, 3, 4, 5**
	    Sizes: 1 to 5 gang.
	    Stainless steel cover.
	    Visible mounting screws.

DOUGLAS LIGHTING CONTROLS

K24.11