

Functionality Statement – Example 1 – Railway platform

This statement uses DIDIO 7001 controllers with bespoke firmware from Creative Lighting www.creativelighting.com.au

Inputs

- Motion sensor(s) on platform for main section of platform
- Motion sensor(s) on platform for sub-section of platform
- Motion sensor(s) in foyer for foyer downlights and signs
- PE cell (detects day/night state)
- Override button for foyer downlights and signs
- Override button for foyer uplights
- Override button for entrance lights
- Override button for platform lights
- Button for 100hr burn-in of dimmable fluorescent and compact fluorescent lamps

Outputs

- DALI control (for controlling dimmable platform lights)
- RS-232 Serial (for duplicating DALI commands on all the DALI lines using other DIDIO's)
- 24V output for contactor control (switching foyer downlights and signs)
- 24V output for contactor control (switching foyer uplights)
- 24V output for contactor control (switching entrance lights)
- 24V output for burn-in indicator LED

PE Cell switching

The output from the PE cell (either open or closed) will need to be stable (i.e. doesn't change) for 10mins before the controller will react. This will reduce false switching due to temporary loss or gain of outside lights levels (e.g. due to clouds/lightning etc)

System Power-up

When the controller is powered up, it will assume that it is currently night-time (as this will provide the most lights being ON/MAXIMUM by default). If it is actually day-time, then this will be detected after 10mins (the normal PE cell stability timeout) and the normal night-to-day transition will occur.

Operation of Platform Lights

There are two independent groups of lights on the platform, referred to as the main section and sub-section of the platform. All lights on the platform are controlled via the DALI interfaces, and therefore are dimmable. Three levels are used during operation: OFF, MINIMUM and MAXIMUM.

Platform lights during the day

The default level for all platform lights during the day is OFF.

Movement detected in either platform section will not cause the lights to turn ON.

If the platform override button is pressed, then all platform lights will be set to MAXIMUM for 1 hour. If the button is not pressed again within 1 hour, then all platform lights will be set back to OFF.

While the lights are set to MAXIMUM, pressing and holding the button for 2 seconds will cancel the override and all platform lights will be set back to OFF.

Platform lights at transition from day to night

The default action for all platform lights at the transition from day to night is to be set to MINIMUM.

If movement has been detected in the main section of the platform during the 30 minutes before the transition, then the main section lights will be set to MAXIMUM instead of MINIMUM.

If movement has been detected in the sub-section of the platform during the 30 minutes before the transition, then the sub-section lights will be set to MAXIMUM instead of MINIMUM.

If the override button has been pressed during the hour before the transition, then all platform lights will stay at MAXIMUM.

Normal night-time operation and time-outs apply after the above checks have been made.

Platform lights at night

The default level for all platform lights at night is MINIMUM.

If movement is detected on the main section of the platform, then the main section lights will be set to MAXIMUM for 30 minutes. If no movement is detected in that section for 30 minutes, the main section lights will be set back to MINIMUM.

If movement is detected on the sub-section of the platform, then the sub-section lights will be set to MAXIMUM for 30 minutes. If no movement is detected in that section for 30 minutes, the sub-section lights will be set back to MINIMUM.

If the platform override button is pressed, then all platform lights will be set to MAXIMUM for 1 hour. If the button is not pressed again within 1 hour then the platform lights will be set back to MINIMUM. While the override is active, pressing and holding the button for 2 seconds will cancel the override and the lights will be set back to MINIMUM.

The platform lights will only be set to MINIMUM if no movement is detected for 30 minutes (note that main section and sub-section are independent) and the override button hasn't been pressed for 1 hour.

Platform lights at transition from night to day

The default action for all platform lights at the transition from night to day is to be set to OFF.

If the override button has been pressed during the hour before the transition, then all platform lights will stay at MAXIMUM.

Normal day-time operation and timeouts apply after the above check has been made.

Operation of Entrance Lights

From the point of view of the controller, there is only one section of entrance lights, and this is switched via a 24V output. There are 2 states for the entrance lights: OFF or ON.

Entrance lights during the day

The default state of the entrance lights during the day is OFF.

If the entrance lights override button is pressed, then the entrance lights will be set to ON for 1 hour. If the button is not pressed again within 1 hour, then the entrance lights will be set back to OFF. While the lights are set to ON, pressing and holding the button for 2 seconds will cancel the override and the entrance lights will be set back to OFF.

Entrance lights at transition from day to night

At the transition from day to night, the entrance lights will be set to ON.

Entrance lights at night

The entrance lights will always be ON at night.

Entrance lights at transition from night to day

The default action for the entrance lights at the transition from night to day is to be set to OFF.

If the override button has been pressed during the hour before the transition, then the entrance lights will stay ON.

Normal day-time operation and timeouts apply after the above check has been made.

Operation of Foyer Lighting (Downlights, Uplights and Signs)

There are two sections of lights associated with the foyer, the downlights and signs section, and the uplights section. Both of these sections of lights are switched independently via 24V outputs. There are 2 states for each of the foyer sections: OFF or ON.

Foyer lights during the day

The default level for all foyer lights during the day is OFF.

Movement detected in the foyer will not cause the lights to turn ON or stay ON.

If the foyer downlights and signs override button is pressed, then the foyer downlights and signs will be set to ON for 1 hour. If the button is not pressed again within 1 hour, then the foyer downlights and signs will be set back to OFF. While the lights are set to ON, pressing and holding the button for 2 seconds will cancel the override and the lights will be set back to OFF.

Same functionality for the foyer uplights and override button as above.

Foyer lights at transition from day to night

If the foyer downlights and signs are set to ON due to the override button, then any movement detected in the 30 minutes before the transition will cause the lights to stay ON if necessary.

Same functionality for the foyer uplights as above.

Normal night-time operation and timeouts apply after the above checks have been made.

Foyer lights at night

The default level for all foyer lights at night is OFF.

If movement is detected in the foyer, then the foyer downlights and signs will be set to ON for 30 minutes. If no movement is detected in the foyer for 30 minutes, the foyer downlights and signs will be set back to OFF.

Same functionality for the foyer uplights and motion detector as above.

If the foyer downlights and signs override button is pressed, then the foyer downlights and signs will be set to ON for 1 hour. If the button is not pressed again within 1 hour then the foyer downlights and signs will be set back to OFF. While the lights are set to ON, pressing and holding the button for 2 seconds will cancel the override and the lights will be set back to OFF.

Same functionality for the foyer uplights and foyer uplights override button as above.

The foyer lights will only be set to OFF if no movement is detected for 30 minutes and the corresponding override button hasn't been pressed for 1 hour.

Foyer lights at transition from night to day

No specific checks are required during the transition from night to day for the foyer lights.

100 hour burn-in

When the 100hr burn-in button is pressed for at least 2 seconds, the controller will commence the 100hr burn-in procedure. This means that all fluorescent lights (platform lights) will be set to MAXIMUM for 100hrs (even during day-time). If the controller loses power during the 100hr burn-in, it will resume the burn-in when power is restored.

Note: the 100hr burn-in assumes that all of the platform lights have mains power connected since they are set to MAXIMUM via the DALI interface.