

600 sqft Occupancy controlled Areas for Title 24 and NYCC

The code is requiring no Occupancy zone to be greater than 600 ft². In addition, there are a few allowances to prevent dark spots in open areas. (<https://inside.lighting/news/22-10/lighting-control-whats-new-title-24>) This function can be addressed using our new 4000 series Sensor (WORxDG1-BPR-N). In the Dialog protocol the tracking if an area is Occupied is done using the "Unoccupied" parameter to coordinate "Linked" sensors. This application note will give you an example of how to configure a small open office area.

Occupant Sensing in Offices

Occupant-sensing controls are required in certain spaces such as offices 250 sq.ft. or smaller, while in others, they present an option to comply with automatic lighting shutoff requirements. These devices automatically turn Off lighting when the area is unoccupied. The device may also be designed to automatically turn On lighting.

The 2022 version of Title 24, Part 6 now requires occupant sensors control the general lighting in offices larger than 250 sq.ft. and requires that each sensor be configured in a control zone no larger than 600 sq.ft. These requirements are similar to provisions in both the 2018 and 2021 versions of the International Energy Conservation Code. Note that undershelf and furniture-mounted task lighting controlled by a local switch and either a time switch or occupant sensor are exempted.

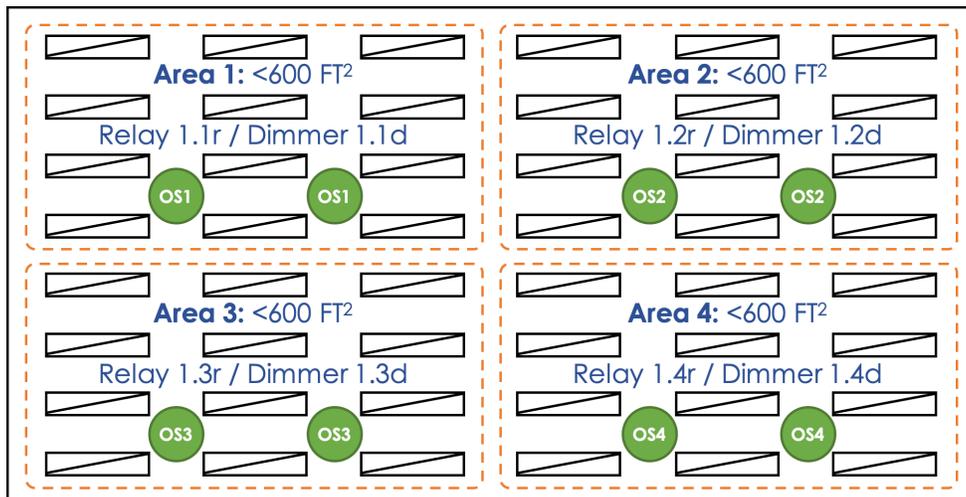
Here's how it works:

1. Upon detecting occupancy, the sensor may automatically turn the zone's lighting On to any level up to full power.
2. Within 20 minutes of detecting a lack of occupancy, lighting power in the sensor's zone must uniformly reduce by at least 80 percent of full power.
3. If sensor status indicates all zones in the overall office area are unoccupied, the system must turn all lights in all zones Off within 20 minutes.

The light reduction of at least 80 percent in unoccupied zones ensures energy savings are achieved while also enabling the general lighting to provide some illumination when neighboring zones are still occupied.

While zones cannot be larger than 600 sq.ft., designers should consider basing zones on the lighting layout, which may entail designing smaller zones. Either way, this code change is expected to encourage adoption of luminaire-level lighting controls and wireless networking capability. If the luminaires feature an embedded sensor able to enact luminaire control autonomously, each luminaire can be regarded as its own control zone while interacting with other zones wirelessly to enact a room-based shutoff strategy.

Setup



All Unoccupied

Function	Address	Members			
Area 1 Occupied	Preset #1:	1.1r ON	1.1d 100%	1.1d 100%	1.1d 100%
Area 1 Prolong	Preset #2:		1.1d 20%	1.1d 20%	1.1d 20%
Area 2 Occupied	Preset #3:	1.2r ON	1.2d 100%	1.2d 100%	1.2d 100%
Area 2 Prolong	Preset #4:		1.2d 20%	1.2d 20%	1.2d 20%
Area 3 Occupied	Preset #5:	1.3r ON	1.3d 100%	1.3d 100%	1.3d 100%
Area 3 Prolong	Preset #6:		1.3d 20%	1.3d 20%	1.3d 20%
Area 4 Occupied	Preset #7:	1.4r ON	1.4d 100%	1.4d 100%	1.4d 100%
Area 4 Prolong	Preset #8:		1.3d 20%	1.3d 20%	1.3d 20%

Operation

Each area will turn ON and full bright as a person enters their area. As each area times out, it will go into "Prolong" dimming the specific area lights down. As prolong expires it will send an unoccupied to the Group address, however this will NOT turn the lights OFF until all zones expire. When all zones timeout to "Unoccupied", Group 1 OFF will be sent and the lights will go OFF.

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