



DSX Access Systems, Inc.

Occupancy Limit

Occupancy Limit Application

In situations where there is a need to limit the number of people in a room an Occupancy limit can be imposed with a counter relay and some programming. Below is an outline of that type of application.

Parts Required:

You will need a counter relay. A spare input and two Devices/Readers. If you are using DSX-1042 controller you may need a FRB8 relay board. Square D makes a counter relay and so do other relay manufacturers.

Connections:

If this is part of a large location, make it a location by itself.

You would have a reader on either side of the door connected to Side A and B of a controller. The Lock would be connected to both relays A1 and B1 for activation. The Door contact would be connected to Side A input 7 only. Input 8 on both sides would be terminated with 1K resistors. Connect A2 relay to the Increment Input on the counter relay. Connect B2 relay to the Decrement Input on the counter relay. Connect the output of the counter relay to input A5. Set the Counter Relay to activate the output at 10 or whatever the occupancy limit should be.

Programming:

1. Create 2 Time Zones TZ1 and TZ2 both 24x7 and set for "Time Zone is OFF when linked to".
2. Add Outputs A1, B1 and assign them Time Zone 2. Set "State when Linked To" for Open.
3. Add Outputs A2, B2 and assign them No Time Zone. Set "State when Linked To" for Secure.
4. Create a Linking Group A consisting of output A2 – Pulse 1 second and a Linking Group B consisting of output B2 - Pulse 1 second and input A7 - Pulse 20 seconds. Use Time Zone 2 for the conditional time zone in the linking groups.
5. Create Linking Level A that activates Linking Group A from reader A and activates Linking Group B from reader B
6. Create Access Level 1 for the side A reader that uses Time Zone 1 (24x7) Create Access Level 2 for the side B reader that uses Time Zone 2 (also 24x7)
7. Assign Linking Level A and Access Levels 1 and 2 to the card holders that will have access to the room.
8. Create Linking Group C that consists of Time Zone 1 set to Follow using conditional time zone 2.
9. Add input A5 and give it no time zone. Assign Linking Group C to the spare input and set it to link on Status Change.

Operation:

When Cards are used at Reader A relay A1 unlocks the door and the linking level activates A2 which increments the counter relay up. When Cards are used at Reader B relay B1 unlocks the door and the linking

level activates B2 which decrements the counter relay. As the traffic flows into the room the counter increments up. When the counter hits 10 (or whatever the occupancy number is) it provides an output that trips input A5 that in turn links to Time Zone 1 turning it OFF. When Time Zone 1 is linked Off Access Level 1 no longer allows anyone to enter. Anyone trying to Enter will be "Denied By Time Zone". Anyone leaving will still be granted access with access level 2 which will decrement the counter relay and once the counter is below 10 it will release input A5 which will enable Time Zone 1 allowing card holders to enter until the counter reaches 10 again.