

# DIAL-TYPE OPERATING SYSTEMS FOR COMMERCIAL DOOR OPERATORS

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Years ago, door operator (CDO) manufacturers developed operating systems for specific commercial door types and user requirements. Commonly called an operating mode, each mode selection alters how the operator functions.

## Determining the mode

A commercial operator can be installed on many doors that use a shaft as the driving element. However, the electrical functionality and usage must synchronize with the door type.

A sectional door is not usually set up the same as a rolling door or security grille. For example, store-front grilles typically function with an OPEN/CLOSE key switch that requires constant contact in both directions. Anytime a contact is released, the door will stop. The specific mode or operating system (OS) is known as D1 mode.

A commercial sectional door will most likely employ the more common B2 operating system, which permits the connection to

the OPEN/CLOSE/STOP control station. With the B2 mode, all of the controls only need a momentary contact to start or stop the door.

## UL requirements

Initially, changing the mode required a savvy technician to juggle two or three wires on the terminal strip. In August 2010, changes to UL 325 entrapment protection guidelines required manufacturers to include more logic.

Since many manufacturers had to undergo a total redesign of their software to adhere to the new UL standard requirements, many

opted to add a Selector/DIAL for the operating modes. Doing so made life much easier for the installer during the setup.

## Educate yourself and ask for guidance when needed

Turning a dial versus rewiring an operator is one of the greatest and most innovative operator improvements ever conceived. If you're not familiar with the common methods of operation of the many commercial door types, then it is best to contact technical support for guidance. They can advise you on the correct OS that should be used.

CDO manufacturers have ensured there is a mode or OS for every type of door. On occasion, you may come across a rare case where a unique OS is required. In these situations, you must contact engineering in advance so they can create a unique OS that accounts for the special job conditions.

## Standard Operating Systems

*The following operating systems, developed and used in North America, have been around for 50 years.*

### B2: OPEN/CLOSE/STOP momentary activation

B2 is perfect for sectional and rolling door types. This mode also permits the addition of multiple accessories and options, such as remotes, loop detectors, etc.

With this OS, there will be a provision for radio control and monitored safety devices, such as photo-sensors or a resistive electric safety edge. Resistive means that the edge will include an end-of-line resistor. To my knowledge, there are a half a dozen or more built-in resistor values available.

The value will vary depending on the manufacturer or brand of operator. You must purchase an edge with a compatible resistor

*Pictured is a typical selector dial found in most CDOs, shown here in ECB mode (electric circuit board mode). All OS choices are easily accessible. It is critical to learn the different options so you can select the proper one.*



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built-in at the end of the edge. To ensure compatibility, it is best to order the safety edge with the operator or to let the safety edge manufacturer know what operator brand you are installing.

### **C2: CONSTANT PRESSURE on CLOSE button**

Typically, the operator will be provided with a three-button station (OPEN-CLOSE-STOP) momentary contact on open and stop. Even with the user pressing the close button, any activation from a safety device will take priority and reverse the door.

### **D1: CONSTANT PRESSURE IN THE OPENING AND CLOSING DIRECTION**

Typically, D1 is used with a two-button station or OPEN/CLOSE key switch. No stop button is required. Constant contact on the open/close keyed or push buttons is required to move the door to the fully open and closed positions.

Any release stops the door. The users must be educated to hold the key or button until the door is fully opened or closed. Otherwise, a user will only move the door in one-second jerking increments, which will overtax the

operator and door and thus lead to premature malfunctions. Any input from an entrapment protection device will not reverse the door but will stop the door instead.

### **E2: CONSTANT CLOSE with ROLL-BACK**

Typically used with a two-button station or OPEN/CLOSE key switch. Momentary contact on open, E2 is popular on installations where the users prefer the door to always be fully open or fully closed, which can prevent a vehicle from crashing into the bottom door panel. Function: Must maintain close contact all the way to the floor. If the close contact is released early or if there is an activation from a safety device, then the door will reverse and completely open.

### **T: TIMER TO CLOSE**

T is the standard TIMER TO CLOSE function. It allows you to adjust the amount of time the operator waits before automatically closing the door. Any activation from an entrapment protection device will reverse the door to the open position and start the process again.

Optional green and red warning lights are recommended as an added safety feature.

### **TS: TIMER SECURE**

TIMER SECURE works similarly to T and includes a security/safety feature to the auto-close timer. Any activation from the entrapment protection device will reverse the door.

Any safety activation will be perceived as an obstruction and will secure the door open, disengaging the timer until the door is closed and the down limit is engaged. Some brands have a stop button, which allows you to refresh the system.

Optional green and red warning lights are recommended as an added safety feature.

### **MS: MID-STOP**

Typically used in automotive service stores that service cars and trucks, MS stops the door automatically at an optional desired position while opening. Constant contact on the open button will override the mid-way point and permit a full open for a taller vehicle. MS conserves energy when a shorter car uses the door.

Some newer operators use an LCD display and keypad instead of a dial for adjustment of these settings. Always refer to the operator manufactures documentation for complete setup and installation instructions. ■

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