



ES540 Multifunction Module Overview

Electronic Solutions Inc.

The Electronic Solutions ES540 is a versatile microprocessor-controlled module which combines two of the most commonly requested swing door accessories – power assist close and a strike interface – into one compact board. It is intended for installation in operators which utilize the industry standard 90 volt brush-type DC motor. When properly installed, the unit is compatible with all existing closing speed adjustment schemes.

The power assist close on the ES540 features two-level power assist, with an adjustable torque setting for the assist level, selectable timed cutoff or hold closed operation of the assist, and adjustable pre-assist and assist times. The power assist feature monitors the motor voltage during closing and opening and does not begin the assist until the closing voltage generated by the spring disappears. The ES540 will also assist the door closed following manual operation (note that a protective threshold sensor is required for this mode of operation).

The input circuit may be configured for either a standard time delay, or for latch operation. In latch mode, an optional latch cancel timeout may be used to force latch timeout after an adjustable period of 1-90 minutes.

The strike interface includes adjustable delays for the lock, the door, and the unlock-to-door actuate interval. This feature may be disabled if desired, allowing the ES540 to operate as a power assist close only.

An additional setting allows the power assist to briefly drive the door in the close direction just prior to opening. This feature is useful in installations that have problems with the lock jamming due to tight weather seals, excessive stack pressure, or both.

Two additional inputs are provided for optional accessory sensors or switches. The function of each input is determined by parameter settings. Choices include threshold recycle-only detector, threshold manual operation detector, close monitor switch (disables assist when not needed, or may be used for a manual assist on/off switch), lock monitor switch (improves response time when a lock is used), assist zone switch (prevents power assist if the door is beyond your designated area), and assist pause sensor (temporarily cancels the assist when active).

The burden for all inputs (actuate and optional devices) is 24VDC at 15 milliamperes maximum. Input LEDs offers visual confirmation that the module is being activated by the external switches. The lock and door outputs are dry contact rated for 3A maximum at 28VDC.

The power requirement for the ES540 is 24 volts AC or DC at 30VA continuous, with 1.5A maximum current during the “assist” portion of the cycle. The unit includes a single digit display and pushbuttons for setting the various parameters and operating modes, as well as for testing. The display shows the current status of the ES540 during normal operation. Module size is 3” x 5”, allowing convenient installation inside the door header. All wiring harnesses necessary for installation are supplied with the ES540.