

MINIATURE LIMIT SWITCHES FOR INDUSTRIAL & TRANSPORTATION APPLICATIONS

Application Note

BACKGROUND

Honeywell MICRO SWITCH Miniature Limit Switches, NGC Series, are a configurable platform of medium-duty switches that allow the customer to choose SPDT (single pole, double throw) or DPDT (double pole, double throw) circuitry while maintaining the same housing and mounting footprint throughout the NGC Series. Configurable to more than 380,000 variations, the NGC Series carries global approvals and is sealed to IP67 for potential use in indoor and outdoor applications. The NGC Series' normally closed contacts are positive opening ⊕.

SOLUTIONS

Industrial: Elevators and Escalators

Detects position of the moving equipment. The NGC Series Miniature Limit Switch may be used to monitor moving components to ensure they remain in their designed envelope of movement. If the limit switch senses an abnormal condition, it will send a signal to the controller to shut the machine down.

As a control mechanism, the NGC Series may be used to indicate end of travel or other movement profile conditions (e.g., the elevator is moving from floor one to floor two). As the elevator passes the limit switch, the elevator engages the limit switch. The switch or the moving equipment then sends a signal to the system controller informing it that the elevator is moving. This signal can be used to further control other operations, or simply provide an indication that the elevator is working as intended.

Industrial: Machine Tools and Packing Equipment

The NGC Series Miniature Limit Switch can be used for position detection, and may be integrated in applications where other sealed limited switches cannot be accommodated due to their larger size. The environment in which machine tools and packaging equipment operate is often dirty and extreme. Components used in machine tools must contend with cutting oils, fluids and metal debris. Components integral to packaging equipment must contend with debris and paper dust from cardboard cutting operations in which switches must operate. The NGC Series provides a sealed switching package with single pole and double throw contact options for operation with enhanced reliability.

Transportation: Scissor Lifts and Mobile Light Towers

The NGC Series Miniature Limit Switch can be used for position detection, and due to its smaller size, it may be integrated in applications where other larger sealed limited switches cannot be accommodated. By design, scissor lifts and mobile light towers lift or extend arms and platforms to elevated positions. Scissor lifts are complex mechanisms which require significant control to function properly. Limit switches like the NGC Series may be used at multiple points on scissor lifts without consuming critical space that is required for the mechanism to function properly. Mobile light towers function similarly; however, they are often used in harsh environments such as in cold temperatures, in rain, and in dusty areas. The NGC Series is designed for use in these demanding types of applications because it is sealed to the environment.

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Transportation: Rail Doors

The NGC Series Miniature Limit Switch can be used for position detection, and due its smaller size, it may be integrated in applications where other larger sealed limited switches cannot be accommodated. Rail doors often function as a pocket-type door and perform a sliding motion when opening and closing (See Figure 2). They are designed this way to maximize the space used by the rail cars. Therefore, products that are used to control or monitor the doors must be compact and efficient. The NGC Series is small enough to fit in tight spaces, yet is built to resist the harsh environments that rail applications typically present.

FEATURES AND BENEFITS

- The NGC Series Limit Switch's miniature size (30,2 mm × 16,7 mm x 55,8 mm) allows it to be installed in areas where space is at a premium
- The internal mechanism of the NGC Series is sealed from the environment, allowing for potential use in many types of environments
- The NGC Series' configurable options allow a common switch body and interface for a variety of sensing requirements:
  - Choice of connector or cable options
  - Compact option for double pole, double throw switching needs
  - Optional cable lengths and switch body exit configurations
- CCC, CE, and UL certifications for global applications
- Incorporates postive-opening, normally closed contacts (NC contacts are forced open via direct mechanical linkage. See Figure 1)
- The NGC Series can be gang mounted to function as a multi-plunger limit switch
- Flexible installation; panel mount with M4 hardware or bushing mount of acutator head with M12 × 1 thread



Miniature Limit Switches

Figure 1. NGC Series Depressed/Released

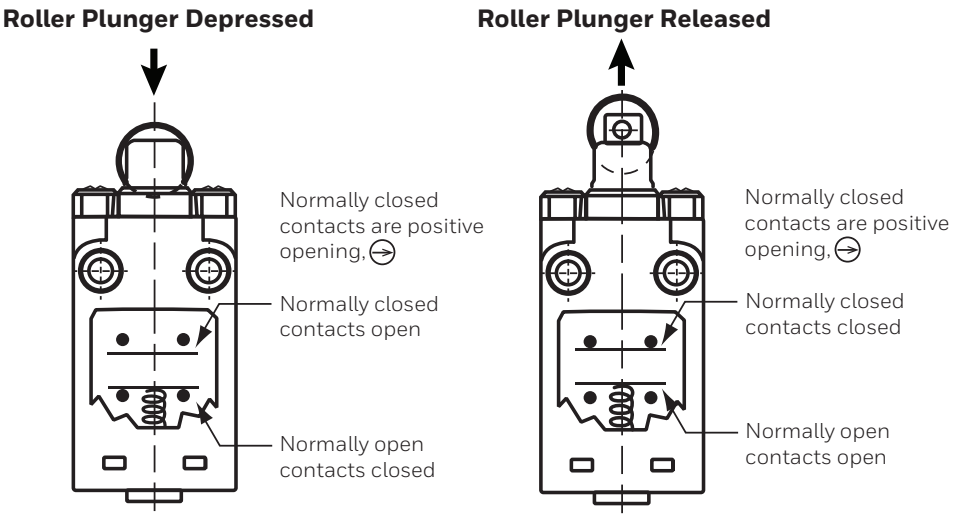
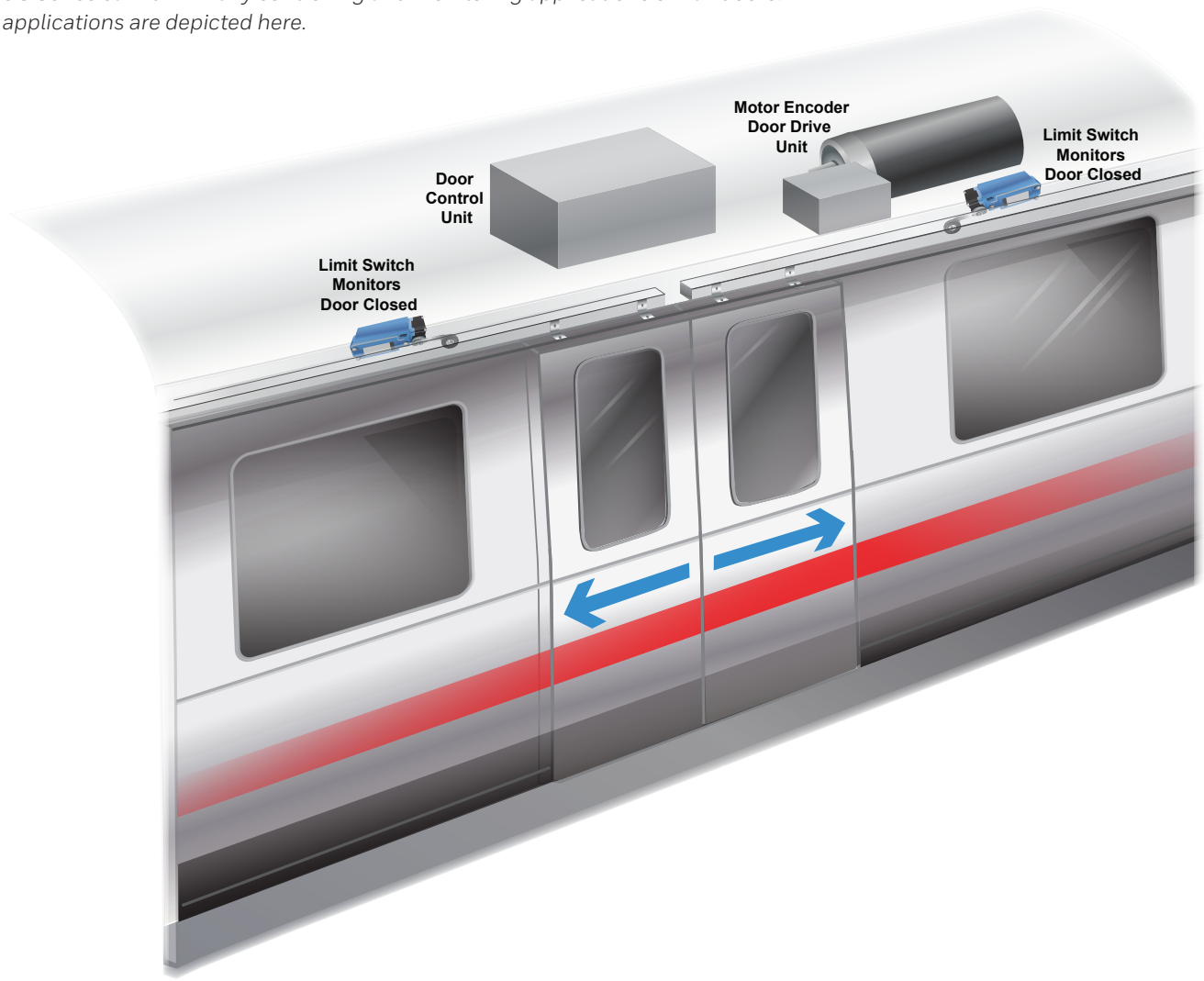


Figure 2. MICRO SWITCH NGC Series in Rail Door Applications

The NGC Series can fulfill many controlling and monitoring applications on rail doors. A few applications are depicted here.





⚠WARNING IMPROPER INSTALLATION

- Consult with local safety agencies and their requirements when designing a machine control link, interface and all control elements that affect safety.
- Strictly adhere to all installation instructions.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

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