

SZL-VL-S Limit Switches for Industrial Applications

An Application Note

Background

Honeywell's experience in the industrial/transportation marketplace has developed a reputation for design and development of durable and reliable products in a variety of demanding conditions. Without the sacrifice of engineering standards, Honeywell has focused on creating a broad spectrum of portfolio offerings to enhance choice and meet market demands.

Since applications and operating environments are unique, every end user has his/her expectations on the specifications to suit the budget. So with the recognition that a portion of market can be served by developing a physically smaller product, Honeywell has engineered the SZL-VL-S Series to maximize functionality. By capitalizing on the reduced package size, these switches can offer more reliability where there is limited operating space and still bring reliability to the internal switching circuit.

Solution

The SZL-VL-S Series miniature-type limit switch is designed for use in applications where limited mounting space is available. With IP67 seal rating, these switches are suitable for OEM machinery that requires a rugged and reliable limit switch capable of being mounted in space restricted applications. Its design enhances ease of wiring with ample wiring space, and has an optional cable gland for faster and more efficient wiring termination.

Typical applications where these benefits can prove advantageous are detailed below.

Scissor and boom lifts - MICRO SWITCH SZL-VL-S limit switches may be used for upper and lower cut-offs of electromechanical pumps that raise and lower the platform. They also limit forward and reverse movement if the platform is not properly stowed. Critical control parameters are maintained for safe operator use. Improved IP67 sealing and extended operating temperature ranges deliver enhanced environmental reliability.

Machine tools - In automated machinery, the switch can provide electrical cut-off if moving features reach the end of mechanical travel. They also monitor the machine tool doors/gates' to verify correct position, and can indicate material is in place for processing. The increased 10 A current rating allows for use in many industrial machine applications.



Conveyor equipment - In auto factory floor settings, SZL-VL-S limit switches may be used to monitor conveyor doors and gates to assure proper positioning. They can also be used to determine if the equipment/material is in the correct position prior to the start-up process. Enhanced reliability of the switch design incorporates positive-break contacts on side rotary versions. In addition, these switches may be utilized for mechanical over-travel detection to avoid machine damage.

Vehicle accessibility lifts - In lifts, these switches can provide up-and-fold ramp cut-off and roll-out-stop on wheelchair lifts in buses and vans. The switch's compact size permits installation in areas with limited physical space. In this type of application, a wobble or linear side rotary actuator offers design flexibility.

Escalators/Motorized walkways - SZL-VL-S switches monitor for loose or missing escalator tread at the top and bottom of the drum. They can detect excess skirt deflection along the length of the escalator and will shut the equipment down if it varies more than specification. The switches may also sense out-of-specification comb deflection at upper and lower points to help prevent damage to equipment.

Industrial Conveyor and Packaging Station



Packaging equipment - When used on shrink-wrap or other packaging machinery, SZL-VL-S switches indicate that the products and/or packages are in place, as well as signal when the operation is complete. The variety of actuators available with the SZL-VL-S Series help to accommodate a variety of applications.

Overhead doors - Often used to indicate if the door is open or closed, SZL-VL-S limits are small enough to fit inside roller door housings. As the roller starts to slide, it can trigger the limit switch. If the door is open, the switch can also “inhibit” control of the HVAC system to save on energy costs.

Agricultural equipment - In agriculture, many processes are automated. Bale collection, for example, is gathered out of sight of the driver. The compact limit switch sits discretely inside the collection unit and sends a signal to the driver that the desired mass is achieved. It may also be used to indicate if larger tillage equipment is properly stowed before transportation on roadways. The seal level of IP67, operating temperature of -20 °C to 70 °C, and 95 % relative humidity makes it suitable in agricultural detection applications.

Rail passenger car internal doors - The SZL-VL-S’s compact size is often ideal to monitor if internal rail-car doors are properly closed. When used on internal compartment and/or service doors, they help ensure the integrity of the passenger car before movement.

Features

- Approvals: CCC, CE, cULus
- Sealed to IP67, NEMA 1, 12, 13
- Snap-action contacts
- Die-cast metal housing with glass-filled, flame-retardant thermoplastic cover
- Stainless steel levers with either steel and nylon rollers
- Variety of actuators
- Positive-opening contacts (side rotary version only)
- RoHS compliant
- Utilization category: AC-15 A300 (380 Vac/0.5 A); DC-13 Q300 (220 Vdc/0.05 A)
- Mechanical life rating: 10 million cycles
- Electrical life rating: 0.5 million cycles

Benefits to Customers

- These switches are user-friendly interfaces and may be used in a broad range of applications to help meet the challenges of many industrial environments.
- A variety of actuators fit on the same platform reducing the need to use various kinds of mounting hardware.

Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

For more information

To learn more about Honeywell's sensing and switching products, call 1.800.537.6945, visit sensing.honeywell.com, or e-mail inquiries to info.sc@honeywell.com

Honeywell Sensing and Internet of Things

9680 Old Bailes Road
Fort Mill, SC 29707
www.honeywell.com

WARNING **PERSONAL INJURY**

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

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

WARNING **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

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