

# Switches for Automated Parking Gates/Barriers

## An Application Note

### Background

Parking gates/barriers restrict entry, provide admittance, and reports an accurate count of vehicles entering and exiting the parking lot or structure.

**If a gate does not operate as designed, downtime could result in loss of revenue due to service calls and inaccurate reporting of vehicles entering and exiting the parking lot.**

These gates can often be located in an open environment where they can be exposed to varying weather conditions or an open-air structure. Open environments can experience high and low temperature extremes (-40 °C to 50 °C), condensation within the device, and exposure to rain, dust, dirt, snow, oil, lubricants, and other elements which can affect the gate's performance.

### Solution

Honeywell offers basic and limit switch solutions to help ensure the gate's reliability and performance. For covered parking garages/structures in non-extreme weather conditions (where dust and moisture are not typical), Honeywell recommends the [MICRO SWITCH BZ Series basic switch](#). For harsh conditions and open-air parking facilities, Honeywell offers the [MICRO SWITCH E6/V6/E7/V7 Series](#) sealed limit switch. Switches are essential for gate reliability and functionality. These switches provide information about the position of the gate, assist the drive to operate correctly, and address open/closed requests from the system driven by motion sensors, cameras, scan engines, etc.

Both the BZ Series and the E6/V6/E7/V7 Series contain a similar basic switch (see Figure 2).

Both switches offer enhanced mechanical life. The BZ basic switch is **rated up to 20 million cycles**; whereas the E6/V6 is **rated up to 5 million cycles**.

Electrically, switches are capable of **switching logic level up to power-duty loads** for PLC and motor control applications. These Series can switch from **mA to up to 22 A**, and from low voltage **12 V to 240 V**. Therefore, this switch package can provide a wide variety of inputs to control systems.

**Figure 1. MICRO SWITCH BZ Basic Switch or BZE6 Sealed Limit Switch Used in a Parking Gate Barrier Application**



The switch is installed on a fixed pole where the arm rests and rotates (see Figure 1). When the arm opens and closes, the switch is actuated to signal a vehicle has either entered or exited. When the arm is down, the switch remains in the free state. Conversely, when the arm is raised, the switch is actuated.

The E6/V6 Series' standard temperature range is -32 °C to 71 °C [-25 °F to 160 °F] with an optional -40 °C [-40 °F] low temperature. The BZ Series basic switch has an operating temperature range of -55 °C to 85 °C [-67 °F to 185 °F].

Honeywell switches have elongated mounting holes that allow for **easier, more accurate mounting**, and also have sufficient space for wiring the contacts more easily and quickly. The BZ and the BZE6 Series features standard 25,4 mm mounting centers for global acceptance. The BZV7 switch has 41,3 mm mounting centers with 5,2 mm holes.

For dirty, dusty, harsh conditions, the **E6/V6 Series is sealed to IP66**, while the **E7/V7 Series is sealed to IP65** to prevent dust and liquid ingress.

MICRO SWITCH E6/V6 and E7/V7 Series switches feature an electrostatic epoxy coated metal housing for **durability in most indoor and outdoor environments**, and a wide variety of actuators to solve most application requirements.

These switches are suitable for global applications.

- BZ Series switches carry **UL, CSA, ENEC, CE** approvals
- E6/V6 Series switches are **UL, CSA, and CE** certified for most SPDT catalog listings
- Most E7/V7 switches have approvals from **CSA and CE**

### BZ Basic Switch Features and Benefits

- Accepted world-wide standard "Large Basic" switch
- Low operating force and differential travel
- Long mechanical life up to 20,000,000 cycles at 95% survival
- Elongated mounting hole for easier, more accurate mounting
- Current rating ranges from mA to 22 A
- Choice of actuation, termination, and operating characteristics

**Figure 2. MICRO SWITCH BZ Basic Switch used in E6/V6/E7/V7 switches**



### E6/V6 and E7/V7 Limit Switch Features and Benefits

- Side or flange mount
- Wide variety of actuators
- Momentary or maintained contact
- Internal grounding screw
- Current range from mA to 22 A
- Temperature range -32 °C to 71 °C [-25 °F to 160 °F]
- Optional low temperature -40 °C to 71 °C
- UL Recognized, file #E12252
- CSA Certified, file #LR41372
- NEMA 1, 3, 4, and IP66 with rubber boot on plunger
- Pre-leaded or connector termination options

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

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- 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.**