

## MICRO SWITCH Key Actuated Safety Switches

GKN Series


004740

Issue 3

**Datasheet**




### DESCRIPTION

The GKN Series key-actuated safety interlocking limit switches are designed for applications where machine guarding is required. Up to 3 normally closed contacts are available per switch to meet most control circuit applications. All normally closed contacts are positive opening . Direct mechanical linkage within the switch force the normally closed contacts open when the actuator key is removed from the switch. When the actuator key is re-inserted into the switch, the contacts change state. The double-insulated plastic housing and stainless steel actuator-key are designed for demanding environments with the internal switch enclosure being environmentally sealed. The design of the switch allows 4 actuator-key entry locations for installation flexibility. Three conduits are integral to each switch for convenience of electrical connections.

### VALUE TO CUSTOMERS

- Common mounting footprint for ease of installation
- Double insulated housing, no ground required
- Large wiring cavity with three conduit entries

### FEATURES

- Red switch body for easy safety recognition
- Four different styles of stainless steel actuator keys
- Three conduits with 0.5-14 NPT or M20 thread connection
- Positive opening action of normally closed contacts  to EN/IEC 60947-5-1-3 specification
- Three contacts; 2NC/1NO or 3NC
- Switch chamber environmentally sealed to IP67 and NEMA 1, 4X (indoor), 12, and 13
- CCC, CE, and UL certifications
- Designed and agency evaluated for safety functions up to and including a SIL3 level

### POTENTIAL APPLICATIONS

- Safety interlock for guards or doors on equipment and machinery
- Designed for hinge or sliding guards or doors

### DIFFERENTIATION

- Up to three NC contacts for control, signaling, or contact redundancy
- Four actuator key entry positions
- Optional flexible key for small door radius
- Optional funnel key where door misalignment may occur

### PORTFOLIO

In addition to the GKN Series safety interlocking limit switches, Honeywell offers other safety interlocking limit switches. These include the miniature plastic body GKM series, EN50047 plastic body GKE Series, EN50041 metal body GKB Series, and metal body solenoid (trapped key) GKL/R Series. Non-interlocking safety limit switches include the GSS Series, non-contact FF Series, and 1CPS Series and 2CPS Series cable/rope pull safety limit switches.

# Key-Actuated Safety Switches, GKN Series

**Table 1. Performance Specifications**

Characteristic	Parameter
<b>Description</b>	Multi-entry, key-operated safety switch
<b>Agency certifications</b>	cULus, CE, CCC
<b>Housing material</b>	Glass-filled nylon
<b>Actuator key material</b>	Stainless steel
<b>Electrical connection</b>	Three conduits, 20 mm or 0.5-14 NPT
<b>Contact/switch options<sup>1</sup></b>	3NC or 2NC/1NO
<b>Contact type</b>	Slow action break-before-make (BBM), or slow action
<b>Contact design</b>	Double break, electrically separated (Zb)
<b>Contact material</b>	Silver alloy
<b>Electrical ratings</b>	See table 2 below
<b>Utilization category</b>	AC-15, A600; DC-13, Q300
<b>Rated operational voltage (U<sub>e</sub>)</b>	120 Vac, 240 Vac, 600 Vac; 125 Vdc, 250 Vdc
<b>Rated operational current (I<sub>e</sub>)</b>	6 A, 3 A, 1.2 A; 0.55 A, 0.27 A
<b>Thermal current (I<sub>th</sub>)</b>	10 A
<b>Rated insulation (U<sub>i</sub>)</b>	600 V
<b>Rated impulse withstand voltage (U<sub>imp</sub>)</b>	2500 V
<b>Short circuit protection device (SCPD)</b>	Class J fuse (10 A/600 V)
<b>Pollution degree</b>	2 (micro-environment, inside enclosure) 3 (macro-environment, installation environment)
<b>Environmental sealing</b>	IP67, NEMA 1, 4X (indoor), 12, and 13
<b>Operating temperature</b>	-25 °C to 70 °C [-13 °F to 158 °F]
<b>Shock</b>	50 G per IEC 60068-2-27
<b>Vibration</b>	10 G per IEC 60068-2-6
<b>MCTF (Mechanical life)</b>	>1,000,000 cycles with single-sided confidence of 100%
<b>MCTF (Electrical life)</b>	>25,000 cycles with single-sided confidence of 75%
<b>SIL Capability<sup>2</sup></b>	SIL 2 capable with HFT <sup>3</sup> = 0; SIL 3 capable with HFT <sup>3</sup> = 1
<b>Proof test interval</b>	1 year

<sup>1</sup>All normally closed contacts are positive opening .

<sup>2</sup>Safety Integrity Level

<sup>3</sup>HFT (Hardware Fault Tolerance)

**Table 2. Electrical Ratings**

AC		DC	
A600	AC15	Q300	DC13
U <sub>e</sub>	I <sub>e</sub>	U <sub>e</sub>	I <sub>e</sub>
Volts	Amps	Volts	Amps
120	6	125	0.55
240	3	250	0.27
600	1.2	–	–

# Key-Actuated Safety Switches, GKN Series

Figure 1. Product Nomenclature

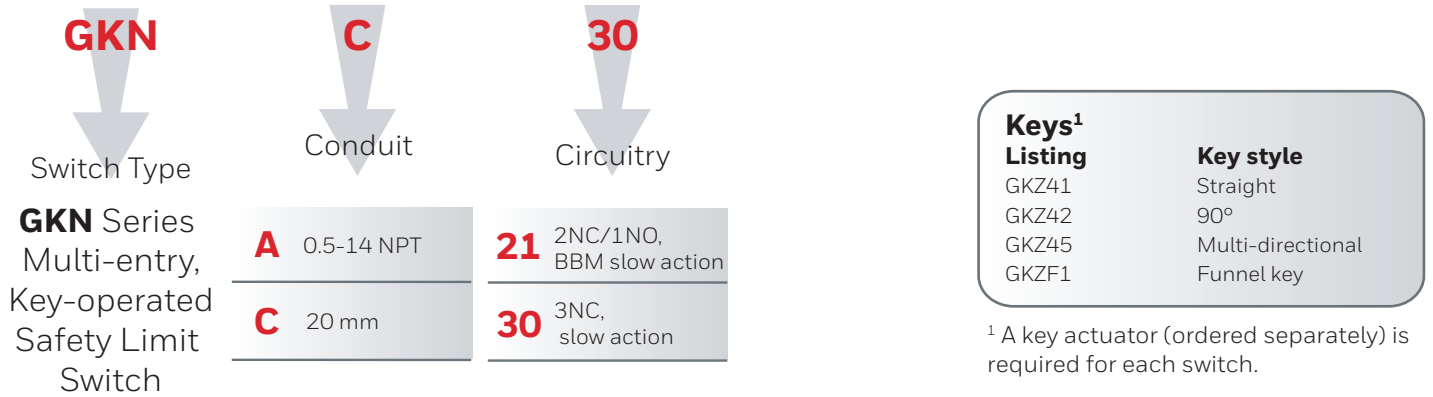
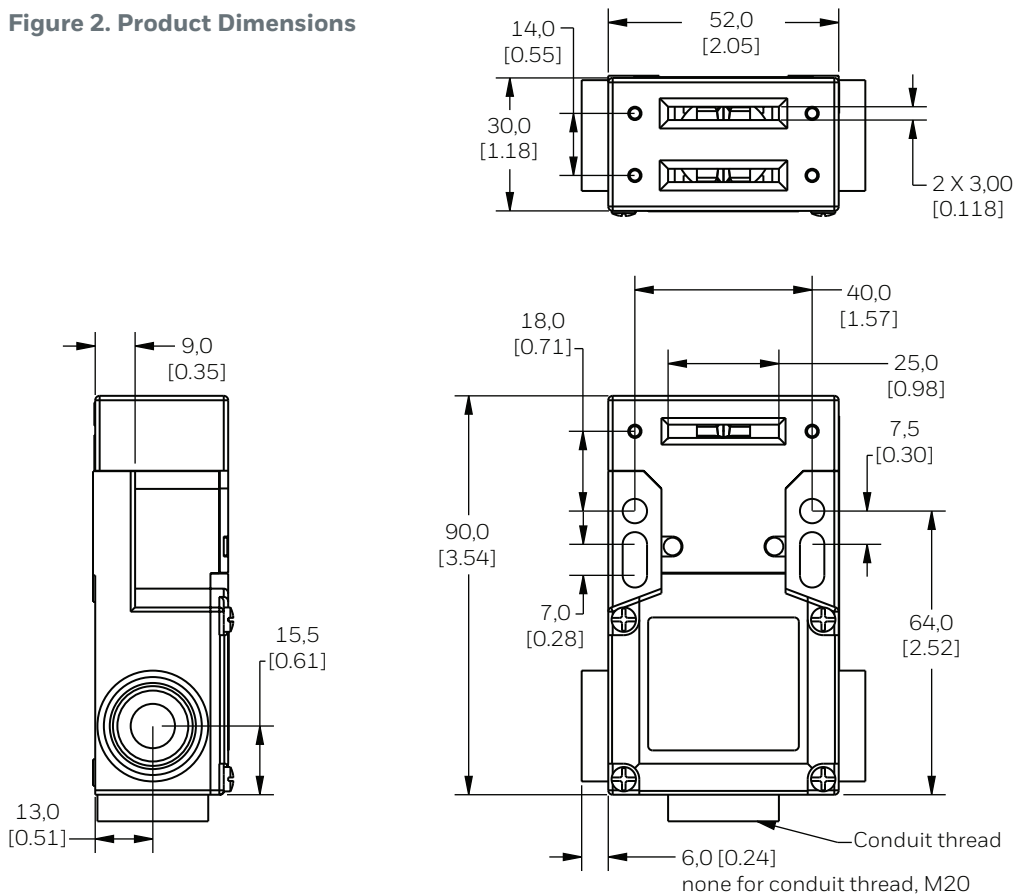


Table 3. Order Guide

	Catalog Listing <sup>1</sup>	Conduit	Contacts
	GKNA21	0.5-14 NPT	2NC/1NO slow action, BBM
	GKNC21	20 mm	2NC/1NO slow action, BBM
	GKNA30	0.5-14 NPT	3NC slow action
	GKNC30	20 mm	3NC slow action

<sup>1</sup> An actuator key (ordered separately) is required for each switch. Select actuator key by reviewing product nomenclature tree on page 3 and dimensional diagrams on pages 3 and 4.

Figure 2. Product Dimensions



# Key-Actuated Safety Switches, GKN Series

Figure 2. Product Dimensions, continued

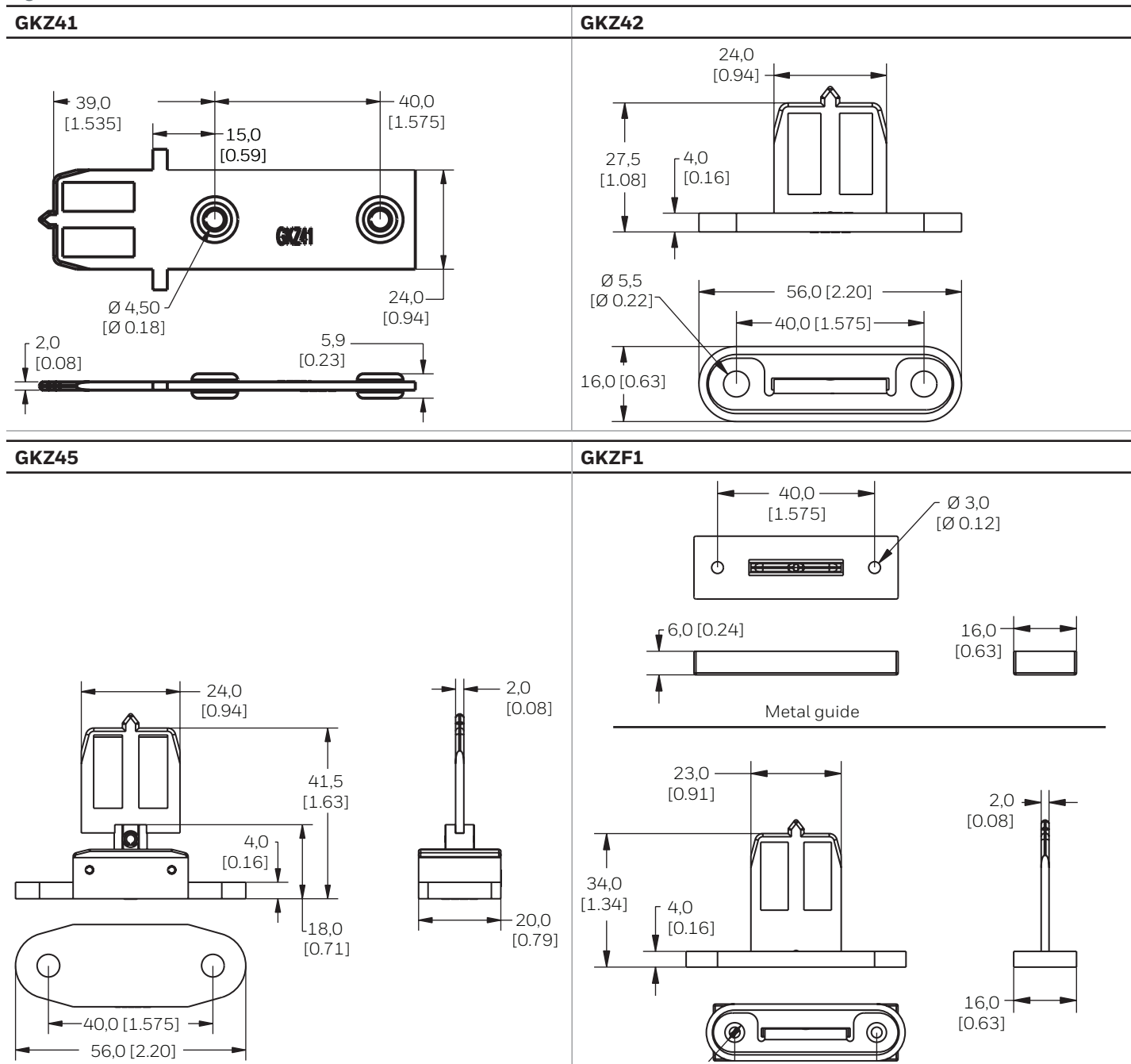


Table 4. Minimum Actuating Radius

Catalog Listing, Description	Radius, min.
<b>GKZ41, Straight key</b>	160 mm [6.30 in]
<b>GKZ42, 90° key (right angle)</b>	160 mm [6.30 in]
<b>GKZ45, Multi-directional key</b>	18° max. all directions
<b>GKZF1, Funnel key and guide</b>	160 mm [6.30 in]

## ADDITIONAL MATERIALS

The following associated literature is available on the Honeywell web site at [sensing.honeywell.com](http://sensing.honeywell.com):

- Product installation instructions
- Product range guide

### Find out more

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, or pricing contact your local sales office.

To learn more about Honeywell's products, call **+1-815-235-6847** or **1-800-537-6945**, visit **[sensing.honeywell.com](http://sensing.honeywell.com)**, or e-mail inquiries to **[info.sc@honeywell.com](mailto:info.sc@honeywell.com)**

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## **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.**

## **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.**

### 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.

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