

GKS Series

Multi-Entry Trapped Key-Operated Safety Interlock Switch



DESCRIPTION

The introduction of the GKS product marks a significant new product class for Honeywell. Honeywell's switching expertise has been applied to a cost-effective, trapped key safety interlock switch. This product allows OEMs to hold a door or gate closed while a hazard still exists. This is particularly important where there is momentum in the machine. In other words, when the machine is signaled to stop, the momentum in

the machine can mean that parts of the machine are still moving and pose an injury risk if the access gate or door is not held closed. Global approvals and standards are important to Honeywell's customers; therefore, the GKS product conform to the requirements of IEC60947-5-1 and carries cULus, CE and CCC approvals.

FEATURES

- Global approvals (CE, cULus, CE, and CCC)
- Glass-filled polyester body
- Power-to-lock and power-to-unlock schemes for key trap
- Flexible switching arrangement
- 24 Vdc, 110 Vac, and 230 Vac coil voltages
- Over-ride mechanism in cover
- Head may be rotated into 4 different positions
- Three conduit openings (knock-out style)
- Switch position provides status

BENEFITS

- Product may be applied to most applications worldwide
- Tough, cost-effective, double-insulated enclosure
- Choice of key trapping methodology
- Four contacts that can be arranged in any configuration¹
- Multiple voltages provide for every geography
- Has a method to open door (in case of power loss, etc.)
- One part number may be used for multiple applications
- Flexible wiring options
- Can diagnose status of gate/door (gate/door closed and locked, gate/door closed and unlocked, gate/door open)

¹ There will be minimum volume requirements for unreleased options.

POTENTIAL APPLICATIONS

- Woodworking machinery
- Printing/paper finishing equipment
- Plastic molding equipment
- Packaging machinery
- Bailing
- Pumping equipment
- Semiconductor manufacturing equipment
- Packaging wrapping
- Specialty equipment
- Machine tool
- Robot cell

GKS Series

SPECIFICATIONS

| Designation and Utilization Category | | Rated Operational Current I _e (A) at Rated Operational Voltage U _e (V) | | |
|--------------------------------------|------|--|---------|-----------------|
| | | 120 Vac | 125 Vdc | 240 Vac/250 Vdc |
| AC15 | B300 | 3 A | – | 1.5 A |
| DC13 | Q300 | – | 0,55 A | 0,27 A |

| | |
|---|--|
| Rated thermal current (I _{th}) | 5 A |
| Sealing | IP67; NEMA 1, 4, 12, 13 |
| Rated impulse withstand (U _{imp}) | 2500 V |
| Pollution degree | 3 (macro-environment, installation environment) |
| Rated insulation voltage (U _i) | 600 V |
| Operating temperature range | -25 °C to 50 °C [-13 °F to 122 °F] |
| Storage temperature range | -40 °C to 85 °C [-40 °F to 185 °F] |
| Short-circuit protective device (type/maximum rating) | Class J fuse (5 A/600 Vac) |
| Expected mechanical life | 1,000,000 operations |
| Conditional short-circuit current | 1000 A |
| Solenoid operating voltage and power | 24 Vac: +10 %, -15 %, 4 W 230 Vac: +10 %, -15 %, 9 W 110 Vac: +10 %, -15 %, 8 W 24 Vdc: +10 %, -20 %, 7 W |

Complies with:

Low Voltage Directive 73/23/EEC, as amended by directive 93/68/EEC.

Machinery Directive 98/37/EEC only as the directives relate to the components being used in a safety function.

IEC/EN60947-5-1.

PART NUMBER TREE

| GKS | X | XX | X | X | X | X |
|---------------|----------------|------------------|-------------------------|--------------------------|-------------------------|----------------------------|
| Series | Conduit | Contacts | Head Orientation | Locking Principal | Solenoid Voltage | Additional Function |
| Door | A - 1/2 NPT | 21 - 2NC/1NO/1NO | L - Front | A - Power to unlock | 2 - 24 Vac/dc | L - LED |
| Interlock | C - M20 | 22 - 2NC/1NO/1NC | N - Back | S - Power to lock | 5 - 110 Vac | |
| Safety Limit | | 46 - 3NC/1NO | P - Left | | 6 - 230 Vac | |
| Switch, | | 47 - 4NC | M - Right | | | |
| Solenoid | | | | | | |

NOTE: The part number tree is provided to demonstrate the potential combinations of components. Actual availability of individual product combinations will depend on the popularity of that type. Please check with your local distributor or Honeywell representative for the available types in your region.

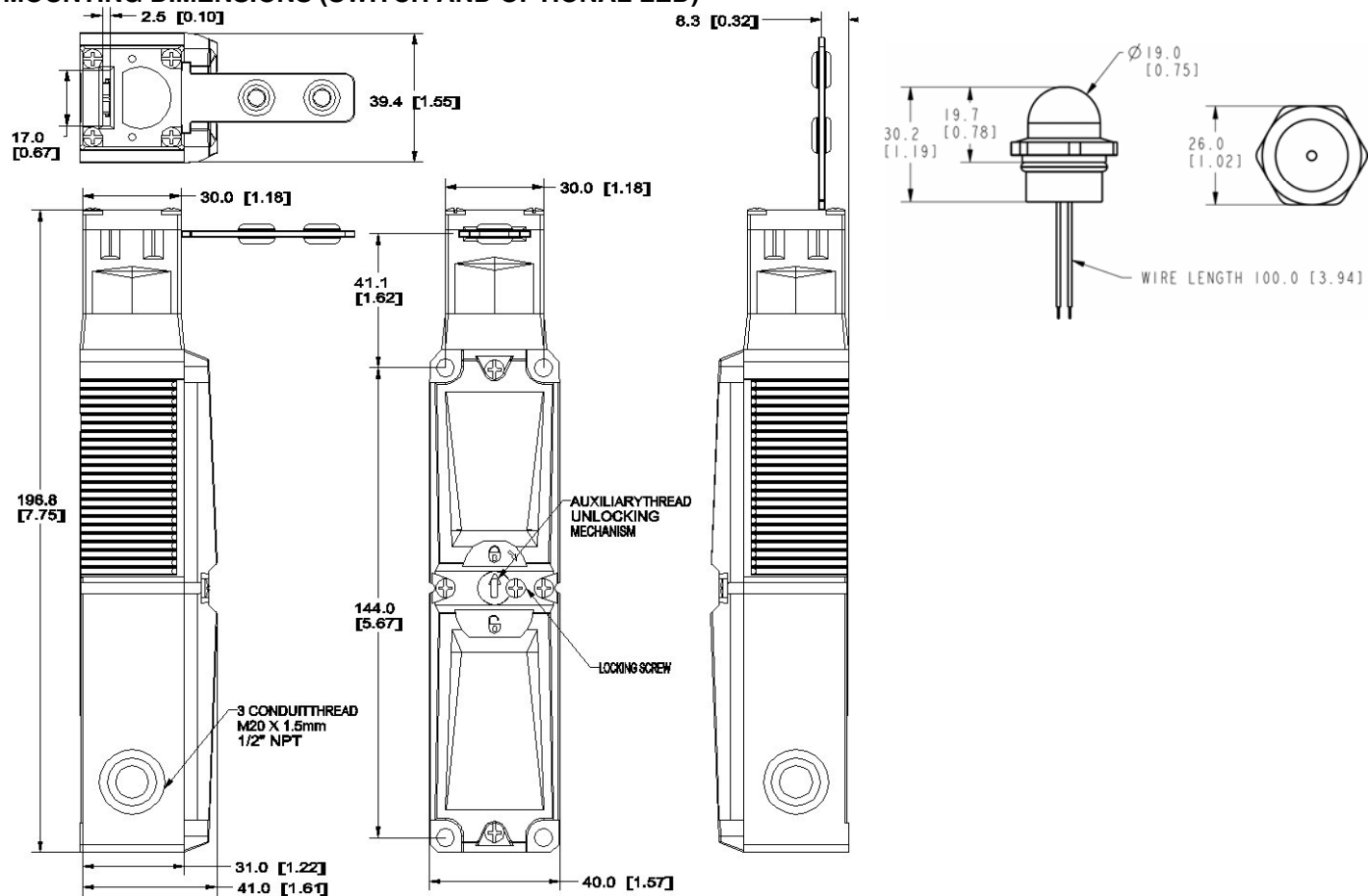
LED OPTION

The built-in LED is suitable for direct installation in the M20 x 1.5/0.5 in NPT thread, one of the three cable entries in the GKS safety switch. The built-in LED can indicate to the user whether the solenoid is unlocked/locked or whether the door is open/closed. The switching element can be wired individually.

| Parameter | Value |
|---------------------------------------|--|
| LED color | Red |
| Connection | 2 connection cables |
| Screw-in thread | M20 x 1.5/ 0.5 in NPT |
| Operating voltage/current consumption | 24 Vdc/45 Ma 115 Vac/15 mA 230 Vac/15 mA |
| Degree of protection | IP67 |

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MOUNTING DIMENSIONS (SWITCH AND OPTIONAL LED)



GKS Series

SWITCH ORDER GUIDE (ACTIVE LISTINGS)

| Catalog Listing | Description |
|-----------------|---|
| GKSA46LA2 | 0.5 in conduit, 3NC/1NO, head to front, power to unlock, 24 Vdc solenoid |
| GKSA46LA5 | 0.5 in conduit, 3NC/1NO, head to front, power to unlock, 110 Vac solenoid |
| GKSC46LA2 | 20 mm conduit, 3NC/1NO, head to front, power to unlock, 24 Vdc solenoid |
| GKSC46LA6 | 20 mm conduit, 3NC/1NO, head to front, power to unlock, 230 Vac solenoid |

KEY ORDER GUIDE (ACTIVE LISTINGS)

| Catalog Listing | Description | Min. Actuating Radius |
|-----------------|---------------------------|--------------------------|
| GKZS6 | Straight key | min. R 160 [6.30] |
| GKZS7 | 90° key | min. R 160 [6.30] |
| GKZS8 | Left-right adjustable key | min. R 32 [1.26] |
| GKZS4 | Up-down adjustable key | min. R 45 [1.77] |
| GKZS9 | Multidirectional key | Moveable max. 18 degrees |
| GKZSF | Funnel key | min. R 160 [6.30] |

CIRCUIT AND TRAVEL DIAGRAMS

| Circuit Drawing | Inserted & Locked | Inserted & Unlocked | Removed & Unlocked |
|-----------------|-------------------|---------------------|--------------------|
| GKS..21.. | | | |
| GKS..22.. | | | |
| GKS..46.. | | | |
| GKS..47.. | | | |

NOTE: This 'truth table' shows the switch status in various conditions. In each column, there is a change in switch contact position from the previous column. It is possible to determine the status of the switch by examining the combination against the table. This can be essential for operational reasons. For instance, the machine should not be started until the key is not only in the head, but is also trapped.

The **first column** depicts the key inserted and the key trapped in that position – this would be the typical run position for the machine – all doors closed. The **second column** illustrates the key inserted, but not trapped – this would be the safe-to-open the door position (as determined by the application's safety scheme). The **third column** shows the key extracted or door-open position.

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KEY DIMENSIONS

| | | |
|--|---|---|
| <p>GKZS6</p> <p>2.0 [0.08]</p> <p>5.9 [0.23]</p> <p>22.00 [0.9]</p> <p>75.2 [2.96]</p> <p>41.7 [1.64]</p> <p>20.0 [0.79]</p> <p>15.0 [0.59]</p> <p>18.7 [0.74]</p> <p>3.0 [0.12]</p> <p>Ø5.0 [0.20]</p> <p>MIN. R160 [6.30]</p> <p>23.0 [0.91] MAX. INSERTION DISTANCE 25.5 [1.00] MIN. INSERTION DISTANCE</p> | <p>GKZS7</p> <p>16.0 [0.63]</p> <p>Ø5.5 [0.22]</p> <p>2.0 [0.08]</p> <p>4.0 [0.16]</p> <p>16.8 [0.66]</p> <p>56.0 [2.20]</p> <p>40.0 [1.57]</p> <p>22.7 [0.89]</p> <p>26.2 [1.03]</p> <p>MIN. R 160 [6.30]</p> <p>4.0 [0.16] MAX. INSERTION DISTANCE 6.0 [0.24] MIN. INSERTION DISTANCE</p> | <p>GKZS8</p> <p>Ø5.5 [0.22]</p> <p>40.0 [1.57]</p> <p>26.0 [1.02]</p> <p>19.0 [0.75]</p> <p>2.0 [0.08]</p> <p>18.8 [0.66]</p> <p>19.0 [0.75]</p> <p>2.0 [0.08]</p> <p>50.0 [1.97]</p> <p>Recommend to apply glue after key set-up (LOCTITE 609)</p> <p>21.0 [0.83] MAX. INSERTION DISTANCE 29.5 [0.93] MIN. INSERTION DISTANCE</p> <p>MIN. R 32 [1.26]</p> |
| <p>GKZS4</p> <p>Ø5.5 [0.22]</p> <p>50.0 [1.97]</p> <p>40.0 [1.57]</p> <p>20.0 [0.79]</p> <p>2.0 [0.08]</p> <p>16.8 [0.66]</p> <p>19.0 [0.75]</p> <p>2.0 [0.08]</p> <p>Recommend to apply glue after key set-up (LOCTITE 609)</p> <p>21.0 [0.83] MAX. INSERTION DISTANCE 23.5 [0.93] MIN. INSERTION DISTANCE</p> <p>MIN. R 45 [7.77]</p> | <p>GKZS9</p> <p>Ø5.5 [0.22]</p> <p>56.0 [2.20]</p> <p>40.0 [1.57]</p> <p>20.0 [0.79]</p> <p>2.0 [0.08]</p> <p>16.8 [0.66]</p> <p>18.0 [0.71]</p> <p>12.0 [0.47]</p> <p>4.0 [0.16]</p> <p>MOVABLE MAX.18"</p> <p>MOVABLE MAX.18"</p> <p>20.0 [0.79] MAX. INSERTION DISTANCE 22.0 [0.87] MIN. INSERTION DISTANCE</p> | <p>GKZSF</p> <p>6.0 [0.24]</p> <p>36.0 [1.42]</p> <p>20.6 [0.81]</p> <p>24.0 [0.94]</p> <p>Ø3.0 [0.12]</p> <p>30.0 [1.18]</p> <p>2.8 [0.10]</p> <p>17.0 [0.67]</p> <p>32.2 [1.27]</p> <p>28.7 [1.13]</p> <p>4.0 [0.16]</p> <p>16.8 [0.66]</p> <p>10.0 [0.39] MAX. INSERTION DISTANCE 12.0 [0.47] MIN. INSERTION DISTANCE</p> <p>MIN. R 160 [6.30]</p> |

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.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement 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 it 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 we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer 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 printing. However, we assume no responsibility for its use.

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.

SALES AND SERVICE

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

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