

Installation Instructions for the Key Operated Safety Interlock Switch

ISSUE 3
PK 81590

ELECTRICAL DATA

Rated thermal current Ith: 10 A

- 1 AC Designation: A300/A600
- 2 AC Utilization Category: AC15
- 3 DC Designation: Q300
- 4 DC Utilization Category: DC13

Rated Impulse Withstand Uimp: 2500 VDC

Maximum fuse rating: 10 A quick acting

Degree of protection:

IP67; NEMA/UL types 1,4,12,13

Permissible Temperature Range:

Operating: -25° to 85°C (-13° to 185°)

Storage: -40° to 120°C (-40° to 248°)

Conductor cross section (screw connection):

Stranded: 0.75 mm² to 2.5 mm²,

18 to 14 AWG

Solid: 0.75 mm² to 1.5 mm², 18 to 16 AWG

NOTICE

Use 90° C wire when ambient is over 75°C.

This product complies with Machinery Directive (89/392/EEC as amended by Directive 91/369/EEC) and complies with EN60947-5-1.

WARNING

Improper installation of this device can cause personal injury to operating personnel. Strictly adhere to the following instructions.

RECOMMENDED TIGHTENING TORQUE AND SCREW SIZES

- Switch enclosure to mounting surface: 4.9-5.9 Nm (43-52 in./lb) M5 or #10
- Cover to switch enclosure: 1.2-1.4 Nm (10-12 in./lb) M4
- Connector to secure cable to enclosure (if required): 1.8-2.2 Nm (16-19 in./lb.)
- Operating head to switch enclosure (if changed): 1,36-1,80 Nm (12-16 in./lb) M4
- Switch terminal screws: 0.8-1 Nm (7-9 in./lb.) M3
- Ground Screw: .08-1 Nm (7-9 in./lb) M3
- Key to mounting surface: 2.4-2.8 Nm (21-25 in./lb) M5 or #10

CHANGE IN OPERATING HEAD KEY ENTRY LOCATION

Head options “E and K” are shipped unassembled from the switch housing and includes (4) one-way screws for customer assembly: Properly seat the factory-installed “O” ring in its seal groove. Determine the required key-entry location and-to prevent improper access to the switch mechanism as well as to ensure proper functioning of the switch-securely fasten the operating head to the switch housing with the (4) one-way screws provided and at the recommended tightening torque shown above. Honeywell’s MICRO SWITCH Division warranty does not cover this version unless the one-way screws are installed.

Operating heads are not available as replacement parts.

INSTALLATION (See Figure 3)

Switch and key must be assembled together before mounting to equipment. Provide mounting holes as shown.

The key must travel to dimension X (Figure 3) to ensure reliable switch contact transfer. For safety, the operating mechanism must be moved to this dimension to ensure the correct operation of the positive break mechanism, which will ensure that a contact gap on the switch will withstand the insulation voltage of 2500V required by IEC 947-5-1 & UL508.

The positive break mechanism will come into effect on the N.C. (normally closed) circuit when the key is extracted from its full inward position to the dimension noted above.

Key actuation force: 22,3 N (5 lb.) max. The maximum force applied to the key must not exceed 100 N (22.4 lb.) to prevent mechanical damage that could lead to failure of the switch.

Key extraction force: 2.2 N (0.5 lb.) max. Head Codes F, G, H, J & K are adjustable up to 13,4 N (3 lb.). Max. key operating speed: 1 m (39 in) per second.

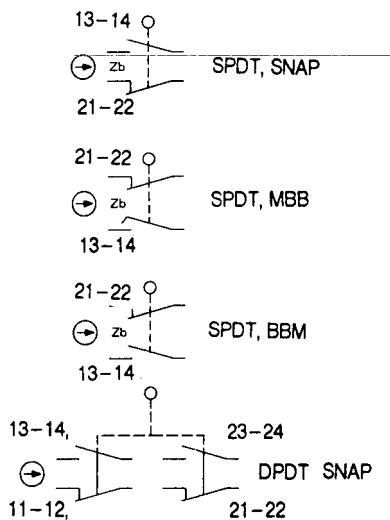
The key is not intended as a stop for the door. Ensure that the key is not traveled more than the maximum total travel shown in Figure 3.

NOTICE

Tamperproof screws must be used to mount the switch and key.

Correct functioning of the positive break switch must be checked during initial installation and periodically thereafter, noting any wear or drift which could occur in the application.

FIGURE 1



BASIC SWITCHES/WIRING

Basic switches are not available as replacement parts. Circuitries in Figure 1 are shown with the key inserted. M3 spade terminals, up to 6,35 mm (.25 in.) wide, may be used with all basic switches.

The positive break contact 21-22 and/or 11/12 must be correctly wired into the circuit to ensure disconnection of the supply, should the switch mechanism fail.

Before energizing associated equipment, always check for correct functioning of the switch mechanism and the positive break mechanism. After installation and often thereafter, check if any change or adjustment has been made to the switch or to the associated installation and, if so, readjust.

INDICATORS (See Figure 2)

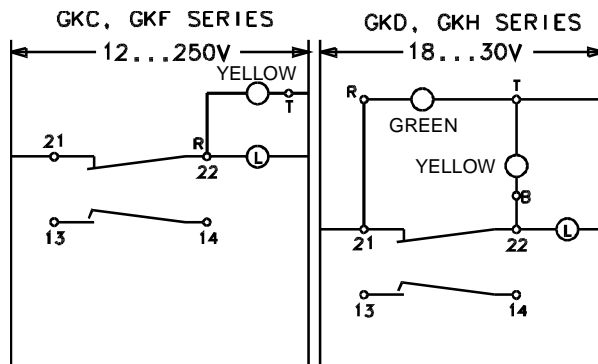
Diagrams are shown with key inserted; yellow indicates door closed, green indicates power on. Single LED, universal voltage, PLC-compatible, LED leakage current < 1.5mA

Dual LED, average current draw = 7 mA per LED

Circuits are shown with MBB slow action basic switch. Any basics shown in Figure 1 may be used with indicators.

T=Terminal
R=Red wire
B=Black wire

FIGURE 2



ROUTINE MAINTENANCE

The safe operation of the machine will depend upon the safe working of all components and switches. A regular maintenance routine for the machine must be established, and that routine should specifically cover the complete application involving the switch. To enhance operator safety, inspect often for any wear on the actuator mechanism (including the key) operating the switch, or on the switch itself, or for any appreciable drift in the operating characteristics. Correct any such wear or drift as soon as it is detected.

As part of the routine maintenance, attention must be paid to that part of the machine which is in any contact with the actuator (key) and to the switch mounting, to ensure that the actuation is maintained to the specified travel.

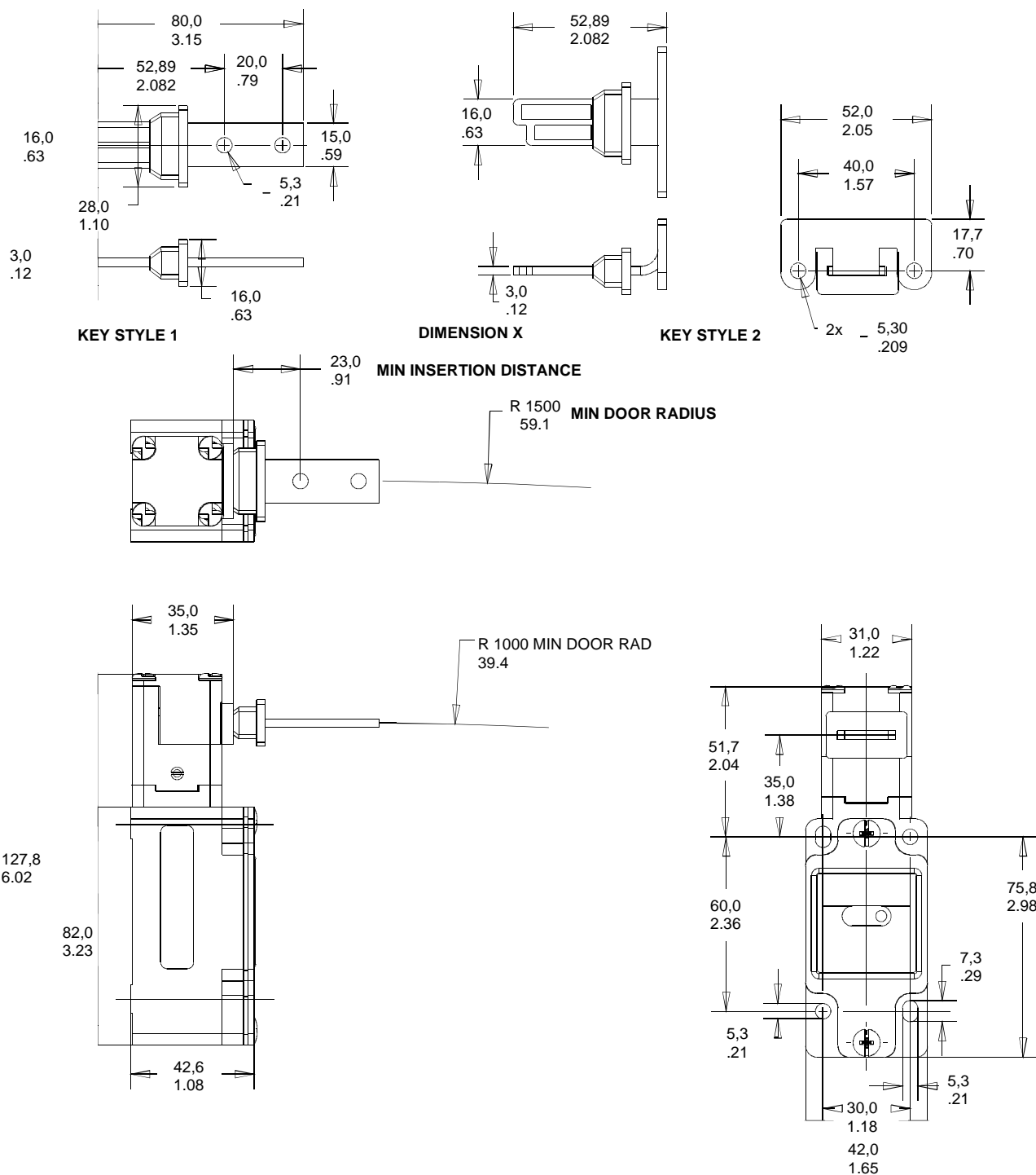
During the routine maintenance, check for correct functioning of the positive break mechanism for electrical operation, which shall be carried out by a qualified person.

Periodic maintenance of the switch will ensure that continued safe operation of the switch is maintained. The frequency of maintenance will be determined by the type of machinery, the frequency of operation, the application and the local environment.

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FIGURE 3 MOUNTING DIMENSIONS
(FOR REFERENCE ONLY)



KEY:
mm
in

GENERAL GUIDELINES

Switch alignment and its operation must be checked. The actuator (key) should move freely with no jamming in the switch during operation.

Ensure that there are no liquids in the switch enclosure. Check the sealing of the switch enclosure and conduits for the source of contamination and correct. Replace the switch, if contaminated.

Test the switch for correct electrical operation, which should only be carried out by a qualified person.

Visually check for mechanical damage on the body, actuator head or key. Damage could cause the product to become a safety hazard, and thus a damaged device must be replaced. Correct the cause of damage to ensure it does not reoccur.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Commencing with date of shipment, Honeywell's warranty runs for 18 months. If warranted goods are returned to Honeywell during that period of coverage, Honeywell will repair or replace 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.**

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