



**KILLARK**

**HUBBELL ELECTRICAL PRODUCTS**  
A Division of HUBBELL INC. (Delaware)  
2112 Fenton Logistics Park Blvd.  
Fenton, Missouri 63026 USA

**INSTALLATION, OPERATION & MAINTENANCE DATA SHEET**  
**SERIES HKH ACTUATORS, PILOT LIGHT LENS**  
**ASSEMBLIES & PLUGS For Use In Zone Classified**  
**Hazardous Locations**



MOMENTARY PUSH



ROTARY SELECTORS\*



MAINTAINED MUSHROOM\*



MOMENTARY MUSHROOM



PILOT LIGHT LENS ASSY



CLOSE--UP PLUG



DOUBLE MOM. PUSH



KEYED MUSHROOM



KEYED ROTARY SELECTORS



ILLUMINATED PUSHBUTTON



3-POLE MOMENTARY PUSH

**HKH SERIES ACTUATORS, PILOT LIGHT**  
**LENS ASSEMBLIES & PLUGS**  
**For Use In Hazardous Locations**  
**(Increased Safety / Restricted Breathing\* / Dust Tight)**

\* - The Series HKH Rotary Selector Switch (non-keyed version) & Twist-to-Release Mushroom Actuator are NOT suitable for Restricted Breathing Applications.

**GENERAL SAFETY INFORMATION**

**CAUTION:** Before installing, make sure you are compliant with area classifications, failure to do so may result in bodily injury, death and property damage. Do not attempt installation until you are familiar with the following procedures. All installation must comply with the applicable Electrical Code.

Make sure that the circuit is De-energized before starting installation or maintenance.

Verify that the installation is grounded. Failure to ground will create electrical shock hazards, which can cause serious injury and or death.

**Important:** Please read these instructions carefully before installing or maintaining this equipment. Good electrical practices should be followed at all times and this data should be used as a guide only.

Technical information, advice and recommendations contained in these documents is based upon information that Killark believes to be reliable. All the information and advice contained in these documents is intended for use only by persons having been trained and possessing the requisite skill and know-how and to be used by such persons only at their own discretion and risk. The nature of these instructions is informative only and does not cover all of the details, variations or combinations in which this equipment may be used, its storage, delivery, installation, check out, safe operation and maintenance.

Since conditions of use of the product are outside of the care, custody and control of Killark, the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith.



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**SERIES HKH CATALOG NUMBERS**

**MOMENTARY PUSH BUTTONS**

**HKHPBMSS** - MOMENTARY PUSHBUTTON, WITH SEVEN COLORED INSERT DISCS: GRN, GRN "START", GRN "(I)", RED, RED "STOP", RED "(O)" and BLACK  
**HKHPBMMR** - MAINTAINED PUSH PULL PUSHBUTTON, MUSHROOM RED  
**HKHPBMMB** - MAINTAINED PUSH PULL PUSHBUTTON, MUSHROOM BLK  
**HKHPBMMG** - MAINTAINED PUSH PULL PUSHBUTTON, MUSHROOM GRN

**3-POLE MOMENTARY PUSH BUTTONS**

**HKHPBMTC** - 3-CONTACT MOMENTARY PUSHBUTTON, WITH SEVEN COLORED INSERT DISCS: GRN, GRN "START", GRN "(I)", RED, RED "STOP", RED "(O)" and BLACK

**ILLUMINATED MOMENTARY PUSH BUTTONS**

**HKHPBILLM** - 2-CONTACT MOMENTARY ILLUMINATED PUSHBUTTON (offered in several lens colors)

**MAINTAINED PUSH BUTTONS w/ PULL RELEASE**

**HKHPBPMTR** - MAINTAINED PUSH PULL PUSHBUTTON, MUSHROOM RED  
**HKHPBPMTB** - MAINTAINED PUSH PULL PUSHBUTTON, MUSHROOM BLK  
**HKHPBPMTG** - MAINTAINED PUSH PULL PUSHBUTTON, MUSHROOM GRN

**MAINTAINED PUSH BUTTON w/ TWIST RELEASE**

**HKHPBTMTR** - MAINTAINED PUSHBUTTON TWIST RELEASE, RED MUSHROOM

**MAINTAINED PUSH BUTTONS w/ KEYED RELEASE**

**HKHPBKMTMRH\*** - HORIZ. KEYED MAINTAINED PUSHBUTTON, MUSHROOM  
**HKHPBKMTMRV\*** - VERT. KEYED MAINTAINED PUSHBUTTON, MUSHROOM  
(\* - may be followed by a number designating the Key Type)

**CLOSE-UP PLUG**

**HKHCP** - UNUSED COVER OPENING CLOSE-UP PLUG

**ROTARY SELECTOR SWITCH ACTUATOR**

**HKH2PSMTH** - 2 POSITION MAINTAINED CONTACT, HORIZONTAL  
**HKH2PSMTV** - 2 POSITION MAINTAINED CONTACT, VERTICAL  
**HKH2PSMMRH** - 2 POSITION MOMENTARY RIGHT CONTACT, HORIZONTAL  
**HKH2PSMMRV** - 2 POSITION MOMENTARY RIGHT CONTACT, VERTICAL  
**HKH3PSMTIH** - 3 POSITION MAINTAINED CONTACT INDEPENDENT CAM, HORIZ.  
**HKH3PSMTIV** - 3 POSITION MAINTAINED CONTACT INDEPENDENT CAM, VERT.  
**HKH3PSMMRH** - 3 POS. MAINT LEFT/CNTR, MOM RIGHT INDEP CAM, HORIZ.  
**HKH3PSMMRV** - 3 POS. MAINT LEFT/CNTR, MOM RIGHT INDEP. CAM, VERTICAL  
**HKH3PSMMLH** - 3 POS. MOM LEFT, MAINT CNTR/RIGHT, INDEP. CAM, HORIZ.  
**HKH3PSMMLV** - 3 POS. MOM LEFT, MAINT CNTR/RIGHT, INDEP. CAM, VERTICAL  
**HKH3PSMMLRH** - 3 POS. MOM LEFT/RIGHT, MAINT CNTR, INDEP. CAM, HORIZ.  
**HKH3PSMMLRV** - 3 POS. MOM LEFT/RIGHT, MAINT CNTR, INDEP. CAM, VERT.

**KEYED ROTARY SELECTOR SWITCH ACTUATOR**

**HKH2PSKH\*** - 2 POSITION MAINTAINED & MOMENTARY, HORIZONTAL  
**HKH2PSKV\*** - 2 POSITION MAINTAINED & MOMENTARY, VERTICAL  
**HKH3PSKIH\*** - 3 POSITION MAINTAINED & MOMENTARY, HORIZONTAL  
**HKH3PSKIV\*** - 3 POSITION MAINTAINED & MOMENTARY, VERTICAL  
(\* - may be followed by a number designating the Key Type)

**MOMENTARY DOUBLE PUSH BUTTONS**

**HKHDBLPBMMGR** - MOMENTARY DOUBLE PUSHBUTTON, WITH SEVEN COLORED INSERT DISCS: GRN, GRN "START", GRN "(I)", RED, RED "STOP", RED "(O)" and BLACK

**PILOT LIGHT LENS ASSEMBLIES**

**HKHPLR** - PILOT LIGHT RED LENS ASSEMBLY  
**HKHPLG** - PILOT LIGHT GREEN LENS ASSEMBLY  
**HKHPLA** - PILOT LIGHT AMBER LENS ASSEMBLY  
**HKHPLC** - PILOT LIGHT CLEAR LENS ASSEMBLY  
**HKHPLB** - PILOT LIGHT BLUE LENS ASSEMBLY

**Application Information:**

These devices are Intended for use in 30.5mm device openings in control station covers with panel thickness of 0.04"-0.25". See Figure 1 for gasket & spacer application.

Actuators are intended for use in conjunction with Killark HKH Series Contact Blocks (DIN Rail\*\* and/or Panel Mounted versions).

\*\* NOTE - Series HKH DIN Rails noted are modified (V-Notched) 35mm x 7.5mm DIN rail (EN 50022): Catalog Nos. HKHDR1, HKHDR2 & HKHDR3

**WARNING - Use of specified DIN Rails is required when mounting Contact Blocks to assure proper height alignment, correct plunger travel, and safe operation of the contacts.**

Actuators, Pilot Light Lens Assemblies, and Close-up Plugs shall be installed in a minimum IP54 rated enclosure where the suitability is determined in the end application. For Restricted Breathing Applications, the enclosure shall have a test port. (See Schedule of Limitations).

Pilot Light Lens Cover Assemblies are intended for use with Series HKH Pilot Lights.

Actuators, Pilot Light Lens Covers and Close-Up Plugs must be mounted to a flat surface in a suitable "Ex e" increased safety enclosure and installed per these instructions.

To maintain the IP66 rating or Dust Protection method "tb", the sealing gasket must be installed in accordance with these installation instructions.

All conductors shall be suitable for both the minimum ambient and the maximum temperature achieved in service. 105C rated wire (or greater) is recommended when installing Series HKH Contact Blocks.

When installed, Series HKH contact blocks must be mounted to provide a minimum of 10 mm clearance to any conductive surfaces and minimum creepage of 16mm.



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**3. Installation Instructions**

Series HKH Actuators and Pilot Light Lens Assemblies are intended for use with Series HKH (polyamide or stainless steel) Control Station Enclosures for Din Rail (V-Notched 35mm x 7.5mm DIN rail :EN 50022) or Panel Mount applications.

**INSTALLATION NOTE – See Figs. 4 thru 7 below for proper orientation of actuator to cover to insure correct installation of contact block & pilot light modules.**

Intended for installation on Type 1/3/3R/4/4X/12/13\* and IP66 Enclosures.

\*-All Actuators are Type 13 except Keyed Rotary

See below for min. and max. panel/cover thicknesses.

**WARNING - For certain enclosure cover thicknesses (See Below), use of specified spacer is required to maintain IP Rating. Without spacer on a thin wall panel, the locknut may not travel the required distance to compress the gasket seal.**

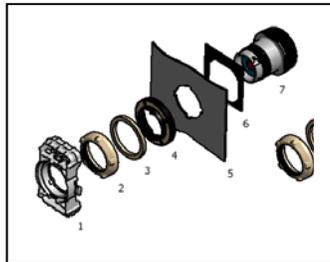
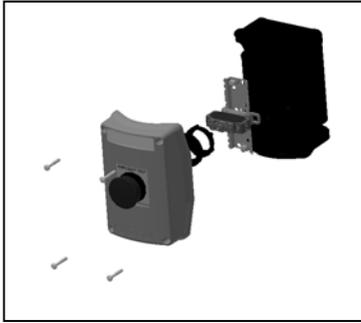


FIGURE 1

FIGURE 2

FIGURE 3

**FIGURE 1- Application on Thin Wall**

1. Bracket for mounting contact blocks. HKHPMBRKT/HKHPMBRKTMM\*  
\*(Required for ILL. P.B. & 3 contact P.B.)
2. Actuator Locknut
3. Spacer when required for thin cover or panel\*\*\*
4. Silicone gasket - (install with Flat Ribbed surface against inside of cover)
5. Panel or Enclosure Cover 0.04"-0.15" Thick.
6. Legend Plate when used for application
7. Actuator

**FIGURE 2- Application on Thick Wall**

1. Bracket for mounting contact blocks. HKHPMBRKT/HKHPMBRKTMM\*  
\*(Required for ILL. P.B. & 3 contact P.B.)
2. Actuator Locknut
3. Silicone gasket – (install with Flat Ribbed surface against inside of cover)
4. Panel or Enclosure Cover 0.16"-0.25".
5. Legend plate when used for application
6. Actuator

\*\*\*Panels/Covers 0.04" to 0.15" thick require a spacer (Install Item 2, See Fig. 1 at left)

\*\*\*Panels/Covers 0.16" to 0.25" thick do not require a spacer (Do Not Install Spacer, See Fig. 2 at left)

**FIGURE 3- Illuminated Momentary Pushbutton or 3 Pole Momentary Pushbutton**

- INSTALL PUSHER PANEL AFTER MOUNTING ACTUATOR TO COVER.

NOTE – Actuator Locknut, Item 2, to be tightened hand tight with tool HKHANTOOL (image in box at bottom left), to insure IP Rating.

**Orientation of Actuator to Cover when installing Push Button & Pilot Light Assemblies on a V-Notched 35mm x 7.5mm Din Rail**

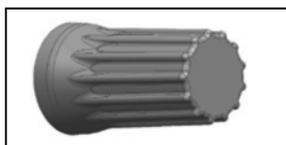
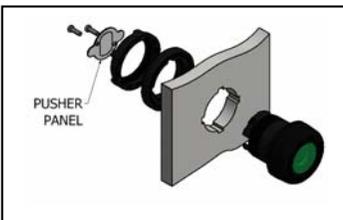
RULE - The Male Keyway on the Actuator will always follow the orientation of the Din Rail.

When the enclosure is in its mounted position and the din rail is vertical, the male keyway of actuator housing is to be positioned at 12 o'clock.

When the enclosure is in its mounted position and the din rail is horizontal, the male keyway of actuator housing is to be positioned at 3 o'clock.

Typical installation of Size 1 Control Stations is with the Din Rail is in a Vertical position.

Depending on the orientation of the enclosure in Size 2 applications, be sure that the installation of the actuator follows the same rule whether the enclosure is mounted vertically or horizontally.



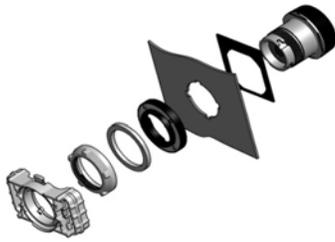
HKHANTOOL - Torque Tool



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Install the actuator with regard to the Din Rail orientation, not the enclosure.

This will insure the four hole pattern on the inside of the actuator that depresses the contact blocks will be parallel with the Din Rail.

This will be important if installing an accessory lockout to insure proper function of contact operation.

**See Illustrations in left-hand column.**

**Orientation of Actuator to Cover when installing Rotary Selectors when the HKH contact block(s) are Din-Rail Mounted**

Rotary Actuators are available with catalog numbers ending in "V" for Vertical orientation and "H" for Horizontal orientations, per application described. This will insure correct indication of handle to legend plate markings.

**RULE** - The Male Keyway on the Rotary Actuator will always follow the orientation of the Din Rail.

When the enclosure is in its mounted position and the din rail is vertical, the male keyway is to be positioned at 12 o'clock (See Fig. 4).

**MUST** use Rotary Catalog numbers ending in "V".

When the enclosure is in its mounted position and the din rail is horizontal, the male keyway is to be positioned at 3 o'clock (See Fig. 5).

**MUST** use Rotary Catalog numbers ending in "H".

**Orientation of Actuator to Cover when installing Push Button & Pilot Light as Panel Mount**

Figure at right shown as installed in enclosure Size1a,1b,1c (& Size 2a with 2 device cover).

**RULE** - The Male Keyway of actuator housing will always be positioned at 12 o'clock when installing panel/cover mounted actuators in all Size 1 Control Stations. For the size 2a two device cover, mounted vertically, the same rule applies. The contact block/pilot light module mounting bracket will be in a horizontal position with the locking tab facing up or down (Figure 6).

Make NOTE of angled tabs on bracket and actuator housing. Be sure tabs on bracket are in line with actuator housing angled slot.

**Do not force bracket onto housing.**

For the size 2a four device and size 2c six device covers, the Male Keyway of actuator housing will always be positioned at 3 o'clock when installing panel/cover mounted actuators with the enclosure in a vertical position. HKHPMBRKT mounting bracket will be in a vertical position (See Fig. 7).

**See Illustrations in left-hand column.**

**Orientation of Actuator to Cover when installing Rotary Selectors in Panel Mount Application**

Rotary Actuators are available with catalog numbers ending in "V" for Vertical orientation and "H" for Horizontal orientations, per application described. This will insure correct indication of handle to legend plate markings.

**RULE** - The Male Keyway on the "V" Series Rotary Actuator will always be positioned at 12 o'clock when installing panel/cover mounted actuators in all Size 1 Control Stations. For size 2a two device panel/cover mounted actuators the same rule applies.

**MUST** use Rotary Catalog numbers ending in "V". The HKHPMBRKT//HKHPMBRKTMM\* (Required for ILL. P.B. & 3 contact P.B.) mounting bracket will be in a horizontal position with the locking tab facing up or down (See Example Figure 6).

**RULE** - For the size 2a four device and size 2c six device covers the Male Keyway on the "H" Series actuator will always be positioned at 3 o'clock when installing actuators. as panel/cover mount.

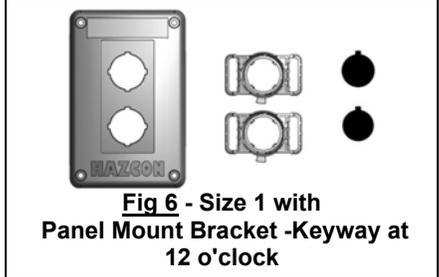
**MUST** use Rotary Catalog numbers ending in "H". The HKHPMBRKT//HKHPMBRKTMM\* (Required for ILL. P.B. & 3 contact P.B.) mounting bracket will be in a vertical position with the locking tab facing left or right (See Example in Fig. 7).



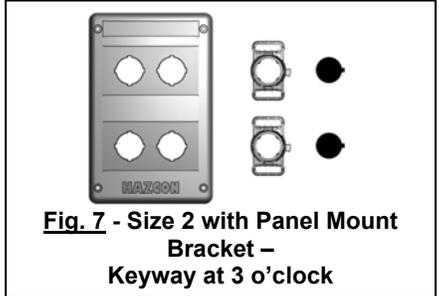
**Fig. 4 - Size 1 with Vertical Din Rail - Keyway at 12 o'clock**



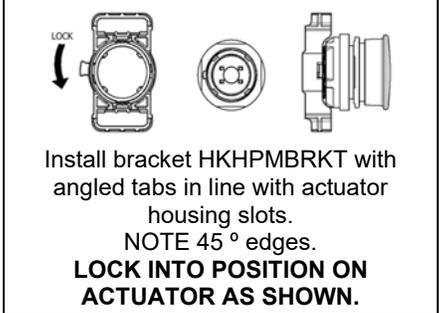
**Fig. 5 - Size 2 with Horizontal Din Rail - Keyway at 3 o'clock**



**Fig. 6 - Size 1 with Panel Mount Bracket - Keyway at 12 o'clock**



**Fig. 7 - Size 2 with Panel Mount Bracket - Keyway at 3 o'clock**



Install bracket HKHPMBRKT with angled tabs in line with actuator housing slots.  
NOTE 45° edges.  
**LOCK INTO POSITION ON ACTUATOR AS SHOWN.**



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**4. Certification Information**

**North American Certifications (cULus):**

Class I, Zone 1 AEx eb IIC Gb  
Zone 21 AEx tb IIIC Db IP66 (U.S.)  
Ex eb IIC Gb U  
Ex tb IIIC Db U IP66 (CAN)  
Class I, Division 2, Groups A,B,C,D  
Class II, Division 1 Groups E, F, G (Canada Only)  
Class II, Division 2, Groups E, F, G; Class III  
Type 3/4/4X/12/13\* \*-All Actuators are Type 13 except  
Keyed Rotary

Standards Applied:

CSA 60079-0                      UL 60079-0  
CSA 60079-7                      UL 60079-7  
CSA 60079-31                    UL 60079-31  
CSA No. 94.1 / 94.2 / No. 14    UL50 / UL50E / UL508

cULus Electrical Ratings :

When used with HKH contact blocks :  
690Vac, 20A, 50-60Hz  
60Vdc, 5A, 110Vdc, 2A, 255Vdc, 1.5A  
½ HP@120Vac, 1 HP@208/240/277Vac  
A600/P600 – Pilot Duty  
350Vac – Tungsten Lamp  
When used with HKH pilot lights :  
12-250Vac/Vdc, 50-60Hz; 0.6 Watts

**Schedule Of Limitations**

- Series HKH Actuators are for use with the HKH Series contact blocks.
- When used in conjunction with normally arcing or sparking devices in end use, these actuators are limited to +65°C ambient.
- When “nR” rated and used in conjunction with normally arcing or sparking devices in end use, the routine dielectric test shall be performed per Clause 23.2.3 of IEC 60079-15, 4<sup>th</sup> Ed.
- The devices were tested for a maximum service temperature of 85°C. The equipment shall not attain a temperature of more than 85°C in use.
- The electrical requirements need to be evaluated in the end-use.

For Restricted Breathing applications, Series HKH Actuators and Close-up Plugs shall be installed in a minimum IP54 rated enclosure with a test port.

**IEC / ATEX Certifications:**

2813 II 2 G Ex eb IIC Gb  
II 2 D Ex tb IIIC Db IP66  
DEMKO 14 ATEX 1400U / IECEx UL14.0104U

II 3 G Ex nR IIC Gc (All HKH Actuators except non-keyed  
Rotarys & Twist-Release Mushrooms)  
DEMKO 17 ATEX 1827U / IECEx UL14.0104U

Standards Applied:

IEC 60079-0                      EN 60079-0  
IEC 60079-7                      EN 60079-7  
IEC 60079-15                    EN 60079-15  
IEC 60079-31                    EN 60079-31

IEC Electrical Ratings:

When used with HKH contact blocks :  
AC690V 16A AC-12, 50-60Hz  
AC230V 16A AC-15, 50-60Hz  
DC60V 5A DC-13; DC125V / DC24V 1A DC-13

When used with HKH pilot lights :  
12-254Vac/Vdc, 50-60Hz; 0.6 Watts