



KILLARK®

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

**INSTALLATION, OPERATION &
MAINTENANCE DATA SHEET**
SERIES HKH E-STOPS
Emergency Stops For Use In Zone Classified
Hazardous Locations



SERIES HKH "E-STOPS"

Emergency-Stops For Use In Zone Classified Hazardous Locations

DEMKO 15 ATEX 1422U

IECEX UL 15.0111U

-50°C ≤ Tamb ≤ +60°C

DIN-Rail mount and Panel-Mount Series HKH E-Stops consist of Series HKH Mushroom Actuators (HKHPBPM TMR, HKHPBTMTMR) with Series HKH Contact Blocks (HKH1NO20D, HKH1NO20P, HKH1NO20PE, HKH1NC20D, HKH1NC20P, HKH1NC20PE).



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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Installation Instructions: Din-Rail Mounting of "Open Type" E-Stop assemblies:

Din-Rail mounted E-Stops shall be mounted in Hubbell Series HKH Enclosures ONLY:

a: Using a screwdriver with a #2 Phillips Head, a Standard Slotted or Robertson style head, remove the cover screws. Install the back box of the control station securely on a flat surface using mounting screws that shall fit the hole or slot (see dimensional drawing) and shall not damage supplied hole or slot. The use of a washer is allowed. Mounting dimensions are shown on this document. Also for convenience the non-metallic enclosures have this information molded into the back surface.

The non-metallic enclosures are identified with "TOP" molded on the inside of the cover and the back of the box. The stainless steel enclosures have the slots located at the bottom.

b: Install the conduit or cable to the box using fittings that are Certified as suitable for the area classification and service environment.

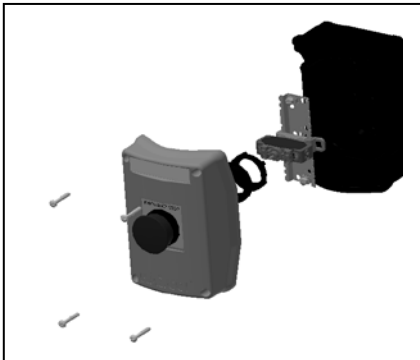
c: Connect conductors to the component terminals. Follow all wire stripping and terminal torque instructions for each component as described below.

Grounding connections are available at the din rail, earth continuity plate and internal external ground stud, if supplied* and hub locknut.

Bonding connections are available on covers and boxes of all stainless steel enclosures. All exposed metal should be bonded per applicable local electrical codes.

* An Internal - External ground stud with securement hardware is supplied on all stainless steel enclosures, and is offered as an option for installing into non-metallic (polymeric) enclosures.

d: Perform a continuity check to ensure the circuit is wired properly for the intended use.

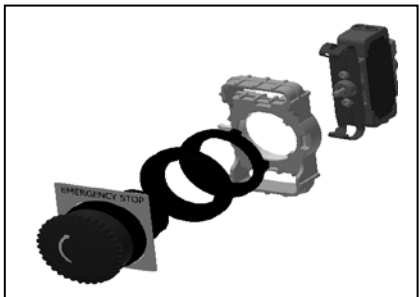


e: Replace the enclosure cover making note of "TOP" molded inside the non-metallic covers and the orientation of the actuators for the stainless steel enclosures. Thread each cover screw half way into the threaded insert without completely tightening in a diagonal pattern. Then complete installation of cover by tightening screws in the same diagonal pattern to a minimum torque of 2.9 Nm (26 lb-in) to a maximum of 3.4 Nm (30 lb-ins.). **DO NOT OVERTIGHTEN OR USE AN IMPACT TOOL.**

A consistent fit over the entire length of the cover joint should be verified at the time of installation.

f: Turn ON the supply circuit and test the system.

WARNING: Electrical shock or personal injury can result from device misalignment. Be sure actuators align with each control module.



Panel Mount Installation Instructions

Panel-mount E-Stops may be mounted in suitably rated Enclosures which meet the wall thickness requirements below.

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

WARNING - For certain enclosure cover thicknesses , 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- Application on Thin Wall

1. Bracket for mounting contact blocks. HKHPMBRKT
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

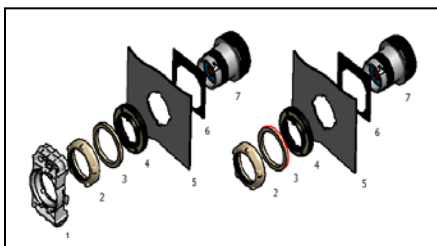


FIGURE 1



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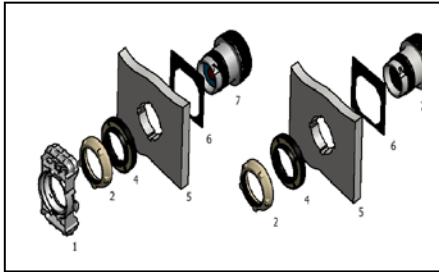


FIGURE 2

FIGURE 2- Application on Thick Wall

1. Bracket for mounting contact blocks. HKHPMBRKT
2. Actuator Locknut
4. Silicone gasket – (install with Flat Ribbed surface against inside of cover)
5. Panel or Enclosure Cover 0.16"-0.25".
6. Legend plate when used for application
7. Actuator

*****Panels/Covers 0.04" to 0.15" thick require a spacer (Install Item 2, See Fig. 1,)**
*****Panels/Covers 0.16" to 0.25" thick do not require a spacer (Do Not Install
Spacer, See Fig. 2)**

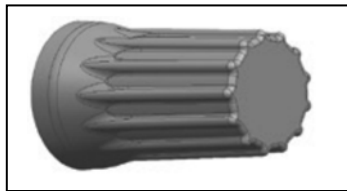


FIGURE 3

NOTE – Actuator Locknut, Item 2, to be tightened hand tight with tool HKHANTOOL FIGURE 3, to insure IP Rating.

Certification Information

cULus Certifications:

Class I, Zone 1 AEx db eb IIC Gb (US)
Zone 21 AEx tb IIIC Db (US)
Ex db eb IIC Gb U (CAN)
Ex tb IIIC Db U (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
-50°C ≤ Tamb ≤ +60°C

Standards Applied:

IEC 60947-5-5 Ed. 1.1 B:2005 (E-Stops)
CSA 60079-0 UL 60079-0
CSA 60079-7 UL 60079-7
CSA 60079-31 UL 60079-31
CSA 60079-1 UL 60079-1
CSA No. 94.1 / 94.2 / No. 14
UL50 / UL50E / UL508

IEC / ATEX Certifications:

ATEX & IECEx Ratings:

2813 Ex II 2 G Ex db eb IIC Gb
II 2 D Ex tb IIIC Db
DEMKO 15 ATEX 1422U

Ex db eb IIC Gb
Ex tb IIIC Db
IECEx UL15.0111U

-50°C ≤ Tamb ≤ +60°C

Standards Applied:

EN 60079-0 IEC 60079-0
EN 60079-1 IEC 60079-1
EN 60079-7 IEC 60079-7
EN 60079-31 IEC 60079-31

Electrical Ratings:

Hubbell Series HKH E-Stops (Electrical Ratings are found on the Series HKH Contact Block nameplates)

cULus Electrical Ratings:

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

Wire range (use CU only):

WIRE STRIP – 3/8 in. TORQUE – 15 LB in.
WIRE RANGE with 1 OR 2 WIRES:
#22 to #12 AWG (SOL & STR) and #10 AWG (STR)

IEC Electrical Ratings:

AC690V 16A AC-12, 50-60Hz
AC230V 16A AC-15, 50-60Hz
DC60V 5A DC-12 DC125 1A DC-12

WIRE STRIP – 10mm TORQUE – 1.7 N m
WIRE RANGE with 1 OR 2 WIRES:
0.5 to 2.5mm² (SOL & STR) and 4.0mm² (STR)

Note - Normally-Open Contact Blocks have a white terminal housing. Normally-Closed are completely gray (as shown).



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Conditions Of Safe Use

E-stops must be mounted on a flat surface in a suitable 'Ex e' increased safety enclosure and installed in accordance with installation instructions.

For US/CAN Applications:

Series HKH Contact Blocks shall be mounted to provide a minimum clearance of 14 mm and minimum creepage of 21.6 mm

Series HKH Pilot Lights shall be mounted to provide a minimum clearance* of 5.0 mm and minimum creepage* of 8.0 mm.

For ATEX/IECEx Applications:

Series HKH Contact Blocks shall be mounted to provide a minimum clearance of 10 mm and minimum creepage of 16 mm.

* Creepage = "over-surface" distance between bare conductive parts at different potentials (60079-7, Clause 4.3)

* Clearance = "through-air" distance between bare conductive parts at different potentials (60079-7, Clause 4.4.2)

For DIN-rail mounting and removal of Contact Blocks and Pilot Lights, care should be taken not to damage the integral flexible clip

DIN-rail devices are designed to be installed on a modified (V-Notched) 35mm x 7.5mm DIN rail (EN 50022), **Killark Catalog No. HKHDR1, HKHDR2 or 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.

The #3-28 x 0.320 in. (Series HKH) Contact Block housing fasteners have a minimum yield strength of 210 MPa for stainless steel or 340 MPa for steel).

Contact the mfr. for information on the dimensions of flameproof joints (HKH Contact blocks).

The non-metallic contact block body was tested for a maximum service temperature of 100°C. It shall not attain a temperature more than 100°C when used in service.

All unused wiring terminals shall be tightened.

The Series HKH mushroom actuators were tested for a maximum service temperature of 85°C. The equipment shall not attain a temperature of more than 85°C in use.

To maintain the IP66 rating or Dust Protection method "tb", all actuator / enclosure sealing gaskets must be installed in accordance with these installation instructions.

The end user shall provide bonding means as necessary

All conductors shall be suitable for the minimum ambient and maximum temperature achieved in service. All conductors shall be sized per the National or Local Electrical Codes for the maximum continuous current or max. motor load of the installation.

DO NOT ALTER THE E-Stop Assemblies OTHER THAN AS DIRECTED BY THESE INSTRUCTIONS, AS ALTERATIONS MAY VOID THE CERTIFICATION(S).

MOUNTING INSTRUCTIONS : CUSTOMER IDENTIFICATION LABELS / NAMEPLATES

When Series HKH Haz. Loc. E-Stops assemblies are provided as components, an adhesive nameplate label is included in the package for installation in the end-product per 60079-0, Clause 29.11.