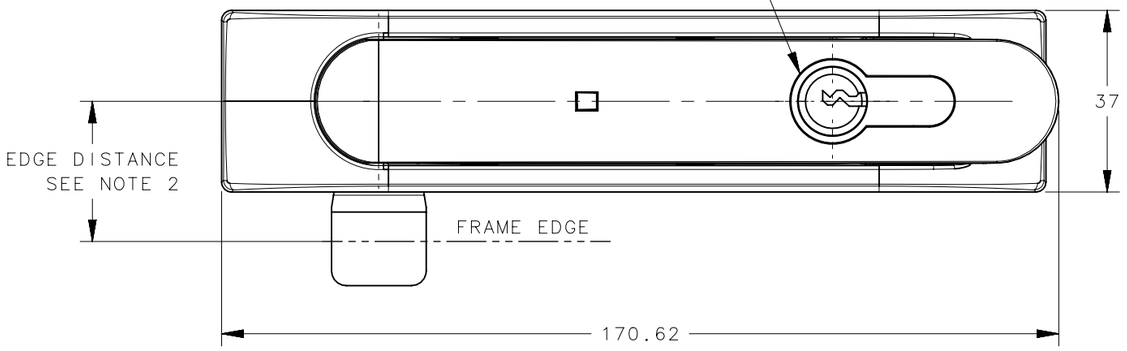
REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
L	05DEC2017	CBI/VK	PRN: P2017-3023

DIN PROFILE LOCKPLUG
SEE LOCK STYLE SELECTION OPTIONS.
*FOR HIGH SECURITY DIN LOCK ONLY - KEY CAN ONLY BE INSERTED/REMOVED IN LOCKED POSITION.
*FOR OTHER LOCK OPTIONS, KEY CAN BE INSERTED/ REMOVED IN LOCKED OR UNLOCKED POSITION.

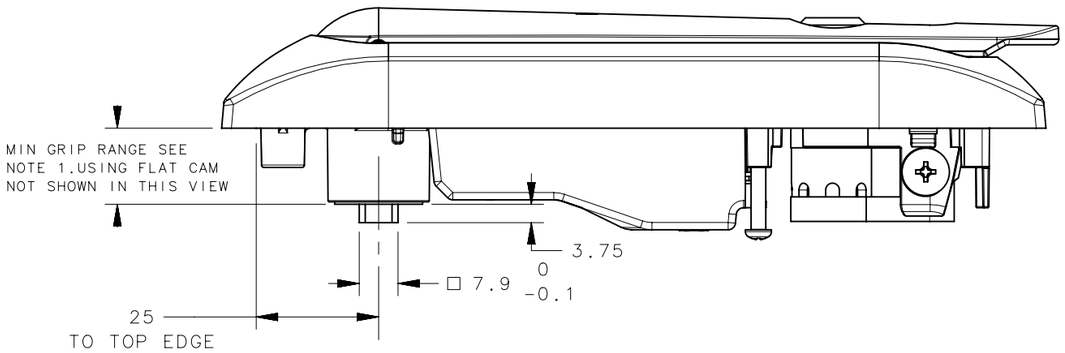


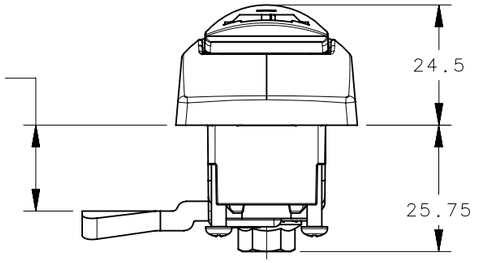
ELECTRONIC SWINGHANDLE
PART NUMBER SELECTION
H3-EM-60-LLL-XX

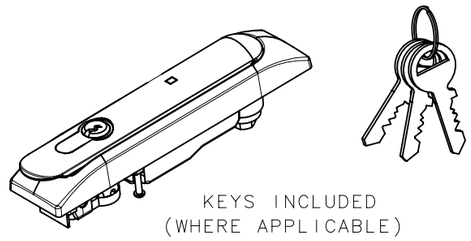
LLL LOCK STYLE

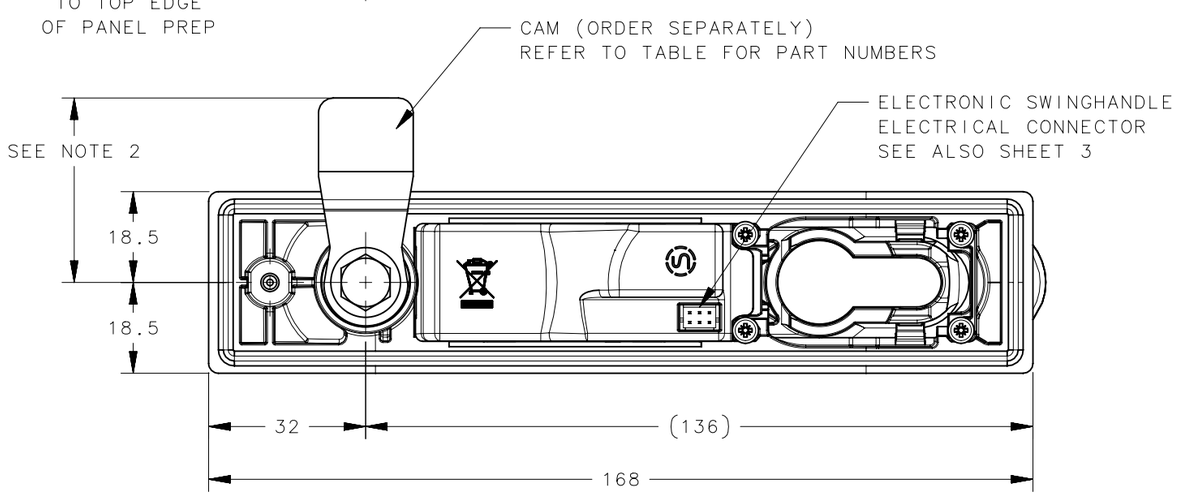
000 NO LOCK OR KEYS
001 BLANK LOCKPLUG, BRIGHT CHROME
100 HIGH SECURITY DIN LOCK (3 KEYS)
200 KEY CODE CH-751 (KEYS INCLUDED)
3LL KEY CODE RSXXX (2 KEYS INCLUDED)
LL = 00 FOR KEY CODE RS001
CONTACT SOUTHCO FOR OTHER AVAILABLE KEY CODES.

XX LOGO STYLE
NONE NO LOGO
10 SOUTHCO LOGO









CAM PART NUMBER (ORDER SEPARATELY)		
GRIP	CAM LENGTH (1) 38 MM	CAM LENGTH (2) 45 MM
15.5	E5-6710	-
17.5	E5-6711	-
19.5	E5-6712	-
21.5	E5-6713	-
23.5	E5-6714	E5-6114
OTHER	PLEASE CONTACT SOUTHCO	

NOTES:
1. MIN GRIP RANGE WITH FLAT CAM 15.5mm.
   EXAMPLE SHOWN: 2mm OFFSET CAM - GRIP RANGE 17.5mm
2. FOR CAM LENGTH 38mm -EDGE DISTANCE 30mm.
   FOR CAM LENGTH 45mm -EDGE DISTANCE 37mm.
3. SELECT CAM PART NUMBERS ACCORDING TO TABLE TO PROVIDE GRIP REQUIRED.
4. THE H3-EM-60-000 IS SHIPPED WITHOUT A LOCKPLUG. THIS PRODUCT MUST BE PAIRED WITH A SOUTHCO APPROVED LOCK TO FUNCTION PROPERLY. USE WITH AN UNAPPROVED LOCK PLUG VOIDS THE PRODUCT WARRANTY.

THIRD ANGLE PROJECTION
MILLIMETERS [IN]
TOLERANCES UNLESS OTHERWISE NOTED
ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.
PER ASME Y14.5M-1994

southco®
CONNECT · CREATE · INNOVATE

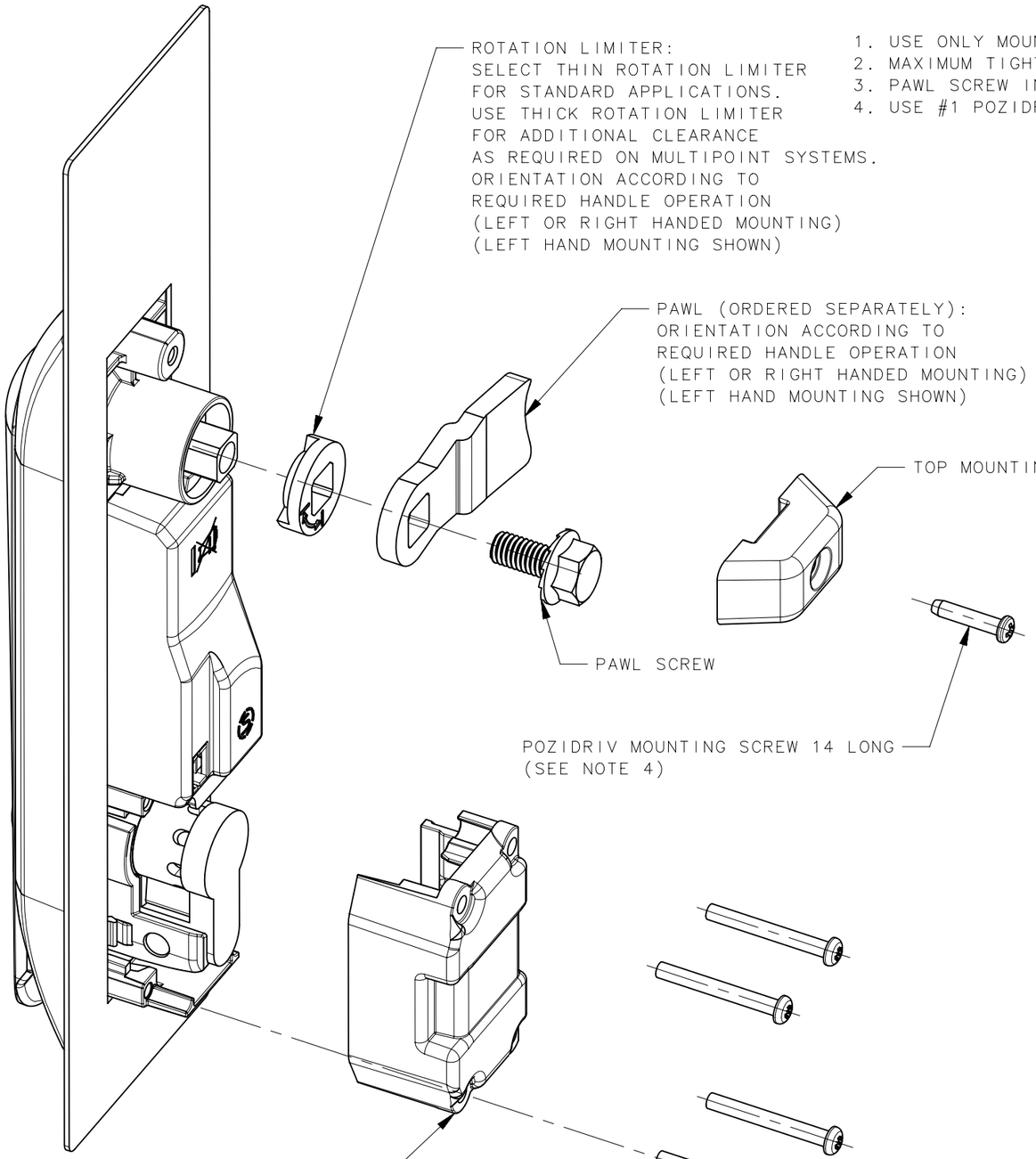
DESCRIPTION
LIFT HANDLE
ELECTRONIC ACCESS CONTROL

SIZE	SYSTEM	DWG NO.
A3	NX	J-H3-EM-60-100

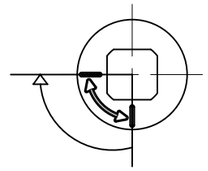
DRAWN BY	DATE	SCALE	SHEET
IGS/RLN	12MAR2009	NONE	1 OF 4

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
L	05DEC2017	CBI/VK	PRN: P2017-3023

1. USE ONLY MOUNTING HARDWARE SUPPLIED.
2. MAXIMUM TIGHTENING TORQUE FOR MOUNTING SCREWS 0.5 Nm.
3. PAWL SCREW INSTALLATION TORQUE 4 Nm MIN.
4. USE #1 POZIDRIV DRIVER WHEN INSTALLING MOUNTING SCREWS.

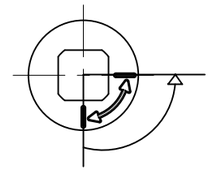


OPTION 1 FOR INSTALLATION
OF ROTATION LIMITER
- VIEWED FROM BACK-



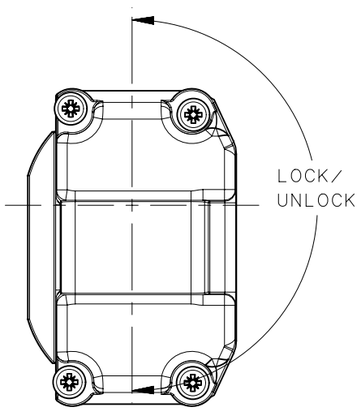
LEFT HAND MOUNTING
TO OPEN: TURN HANDLE 90°
COUNTER CLOCKWISE IF VIEWED
FROM FRONT

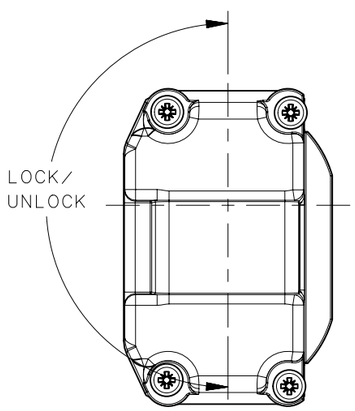
OPTION 2 FOR INSTALLATION
OF ROTATION LIMITER
- VIEWED FROM BACK-



RIGHT HAND MOUNTING
TO OPEN: TURN HANDLE 90°
CLOCKWISE IF VIEWED
FROM FRONT

INSTALLATION OF BOTTOM MOUNTING BRACKET





OPERATION OF LOCK PLUG CORRESPONDS WITH
ORIENTATION OF BOTTOM MOUNTING BRACKET

LEFT HAND MOUNT
WHEN H3-61-55-33
MULTI POINT SYSTEM
IS USED.

RIGHT HAND MOUNT
WHEN H3-61-56-33
MULTI POINT SYSTEM
IS USED.

THIRD ANGLE PROJECTION

MILLIMETERS [IN]

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PER ASME Y14.5M-1994

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DESCRIPTION
LIFT HANDLE
ELECTRONIC ACCESS CONTROL

SIZE	SYSTEM	DWG NO.
A3	NX	J-H3-EM-60-100

DRAWN BY	DATE	SCALE	SHEET
IGS/RLN	12MAR2009	1:1	2 OF 4

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
L	05DEC2017	CBI/VK	PRN: P2017-3023

ACTUATOR MODULE ELECTRICAL SPECIFICATION:

A. POWER: 12V TO 24V
- OPERATING CURRENT: LESS THAN 200mA AT 12VDC WITH NO EXTERNAL MECHANICAL LOAD APPLIED TO HANDLE.
- MAX CURRENT WITH STALLED ACTUATOR: 1A MAX AT 12VDC (STALL LIMITED TO 2 SECONDS)
- STANDBY CURRENT: 25mA TYPICAL.

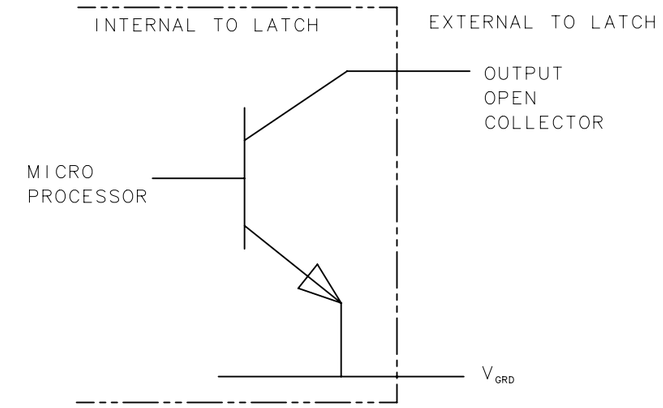
B. CONTROL INPUT:
- TO UNLOCK: SUPPLY 9VDC MINIMUM (DO NOT EXCEED SUPPLY VOLTAGE) FOR A MINIMUM OF 100 MILLISECONDS. THE LATCH WILL REMAIN UNLOCKED FOR AS LONG AS THE SIGNAL IS PRESENT OR A MINIMUM OF 3 SECONDS.

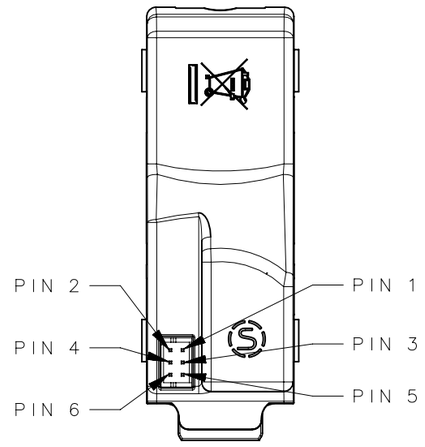
C. OUTPUT:
- OPEN COLLECTOR OUTPUT. RATING 9 TO 24VDC. 100mA MAX LOAD
- CAUTION! TO PREVENT DAMAGE TO THE PRODUCT DO NOT EXCEED MAXIMUM LOADS STATED AND FOLLOW WIRING DIRECTIVES.
- FOR OUTPUT SIGNAL DETAILS AND LED SEQUENCE SEE TRUTH TABLE.

D. CONNECTIONS:
- SIX POSITION CONNECTOR
- HIROSE ELECTRIC CO LTD. PART NUMBER DF11-6DP-2DSA.
- SEE PIN-OUT TABLE.

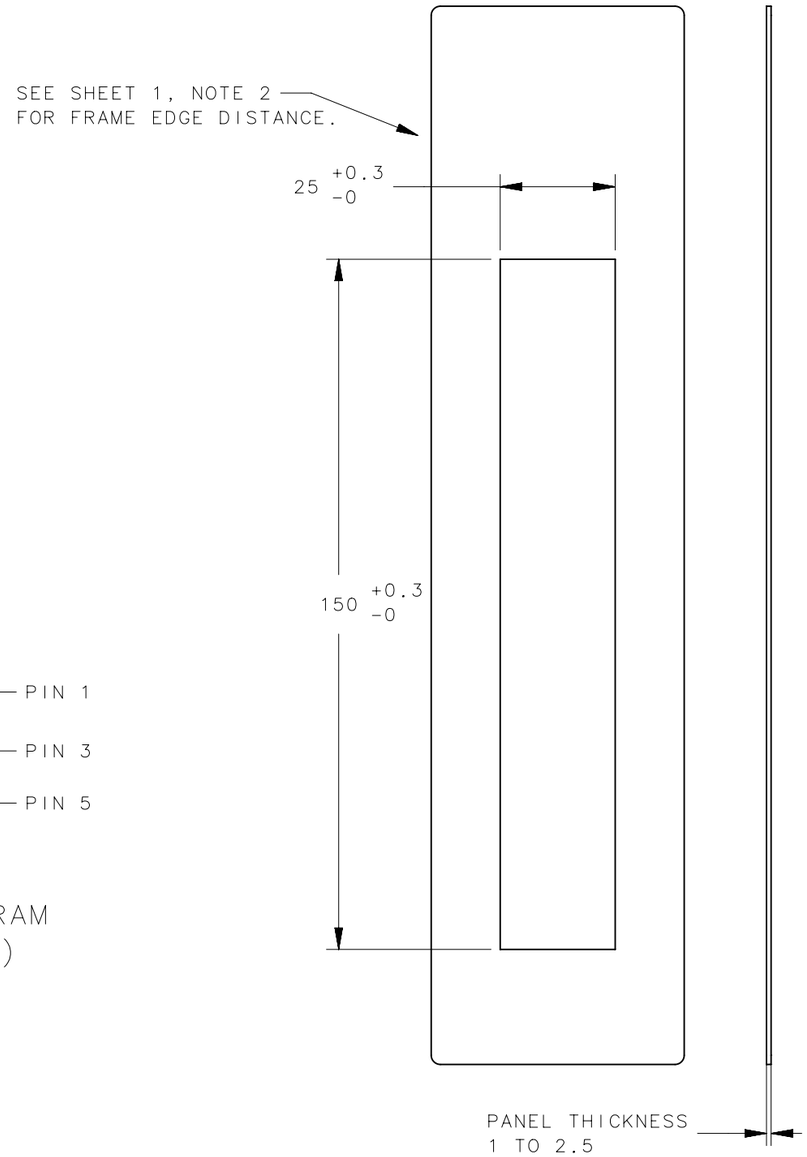
PIN	DESCRIPTION	NOTE
1	VGND	GROUND
2	VSUPPLY	12 TO 24 VDC POWER SUPPLY INPUT
3	N/C	NO CONNECT
4	CONTROL SIGNAL	COMMAND INPUT (9VDC UP TO SUPPLY VOLTAGE, 100 MILLISECONDS MINIMUM)
5	ELECTRONIC LOCK STATUS	OPEN COLLECTOR OUTPUT (RATED FOR VSUPPLY, 100mA MAX. LOAD)
6	MECHANICAL LOCK STATUS	OPEN COLLECTOR OUTPUT (RATED FOR VSUPPLY 100mA MAX. LOAD)

E. WIRE HARNESS (NOT INCLUDED)
SOUTHCO P/N: EA-W01-100 *, SEE ALSO J-EA-W01
FROM ACTUATOR MODULE TO STRIPPED AND TINNED END
LENGTH 1000MM
*CONTACT SOUTHCO FOR OTHER LENGTHS





ACTUATOR
PIN-OUT DIAGRAM
(SEE NOTE D)



PANEL PREPARATION

PROPRIETARY ITEM EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.	THIRD ANGLE PROJECTION MILLIMETERS [IN] TOLERANCES UNLESS OTHERWISE NOTED ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY. PER ASME Y14.5M-1994	southco® CONNECT·CREATE·INNOVATE DESCRIPTION: LIFT HANDLE ELECTRONIC ACCESS CONTROL SIZE A3 | SYSTEM NX | DWG NO. J-H3-EM-60-100 DRAWN BY IGS/RLN | DATE 12MAR2009 | SCALE 1:1 | SHEET 3 OF 4

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
L	05DEC2017	CBI/VK	PRN: P2017-3023

LATCH STATUS DEFINITION

LATCH STATUS	LATCH LED	PIN 6 OUTPUT HANDLE LOCK	PIN 5 OUTPUT ELECTRONIC LOCK	PIN 4 CONTROL INPUT	NOTE
SECURED	BLUE	OPEN COLLECTOR	OPEN COLLECTOR	GND	ENCLOSURE SECURED- ACCESS DENIED
ELECTRONICALLY RELEASED	BLUE / MAGENTA FLASHING	OPEN COLLECTOR	LOW	V^{+}_{ss}	ENCLOSURE READY FOR ACCESS
MECHANICALLY RELEASED	BLUE FLASHING LOW	LOW	LOW	V^{+}_{ss}	ACCESS GAINED - HANDLE LIFTED OR MECHANICALLY UNLOCKED
		LOW	OPEN COLLECTOR	GND	ACCESS GAINED - HANDLE LIFTED - ELECTRONIC LOCK CLOSED
HANDLE NOT FULLY CLOSED	BLUE / RED FLASHING	OPEN COLLECTOR	LOW	GND	INTERIM STATES ONLY DURING CLOSING OF HANDLE
		LOW	LOW	GND	

ELECTRONIC SWINGHANDLE MATERIALS

H3-EM-60-XXX			
COMPONENT	MATERIAL	FINISH	NOTE
CIRCUT BOARD	DETAILS ON REQUEST	DETAILS ON REQUEST	
MOTOR	DETAILS ON REQUEST	DETAILS ON REQUEST	
GEAR SHAFT	STAINLESS STEEL	NATURAL	
WORM GEAR	PA66 1300S	NATURAL	
PINION GEAR	POM M90-44	BLACK	
SPUR GEAR	POM M90-44	BLACK	
GEAR RETAINER	PC (LEXAN V0)	CLEAR	
MOTOR COVER	PC ABS (UL94- V0)	BLACK	
LATCH BODY	30% GF NYLON (UL94- V0)	BLACK (A&B SURFACES VD136)	
HANDLE MOULDING	30% GF NYLON (UL94- V0)	BLACK (A&B SURFACES VD136)	
LIGHT PIPE	PC (LEXAN V0)	CLEAR	
BOTTOM MOUNTING BRACKET	30% GF NYLON (UL94- V0)	BLACK	
SLIDE	30% GF NYLON (UL94- V0)	WHITE	
HANDLE SHAFT	DIE CAST ZINC	ZINC PLATE BRIGHT CHROMATE	
ROTATION LIMITER	DIE CAST ZINC	ZINC PLATE BRIGHT CHROMATE	2 SIZE OPTIONS SUPPLIED
TOP MOUNTING BRACKET	30% GF NYLON (UL94- V0)	BLACK	
MOUNTING SCREW 25 LONG	STEEL	ZINC PLATE + BRIGHT CHROMATE	INSTALL WITH #1 POZIDRIV DRIVER
MOUNTING SCREW 14 LONG	STEEL	ZINC PLATE + BRIGHT CHROMATE	INSTALL WITH #1 POZIDRIV DRIVER
OUTPUT GEAR MOULDING	POM M90-44	BLACK	
REFLECTOR	POM M90-44	OPAQUE WHITE	
CONNECTING LEAD	DETAILS ON REQUEST	DETAILS ON REQUEST	ORDER SEPERATELY
DIN LOCKPLUG	DETAILS ON REQUEST	DETAILS ON REQUEST	OPTIONAL WITHOUT LOCKPLUG
LOCK PLUG RETAINING SCREW	STEEL	ZINC PLATE + BRIGHT CHROMATE + SEALER	
SHAFT PIN	SAE 30302/30304	PLAIN, OILED	
O-RING	BLACK NBR RUBBER	GREASED	
PAWL SCREW	STEEL	ZINC PLATE + BRIGHT CHROMATE	
PAWL	STEEL	ZINC PLATE + BRIGHT CHROMATE	ORDER SEPERATELY
BLANK LOCKPLUG	DIE CAST ZINC	CHROME PLATE/ CLEAR CHROMATE/ BLACK POWDER COAT	
SLIDE SPRING	302 STAINLESS STEEL	NATURAL	

THIRD ANGLE PROJECTION

MILLIMETERS [IN]

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PER ASME Y14.5M-1994

southco®
CONNECT·CREATE·INNOVATE

DESCRIPTION
LIFT HANDLE
ELECTRONIC ACCESS CONTROL

SIZE	SYSTEM	DWG NO.
A3	NX	J-H3-EM-60-100

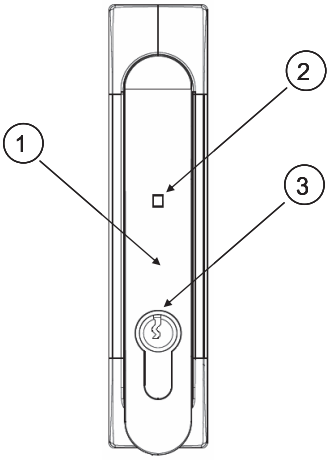
DRAWN BY	DATE	SCALE	SHEET
IGS/RLN	12MAR2009	1:1	4 OF 4

H3-EM Electronic Locking Swinghandle
Operating Instructions

Package Contents

- H3-EM-60-x00 Electronic Locking Swinghandle
- EM-0-45827 M3x25 POZIDRIV® Mounting Screws (qty 4)
- EM-0-47151 M3x14 POZIDRIV® Mounting Screw (qty 1)
- EM-0-45825 Rotation Limiter (qty 1)
- EM-0-58124 Rotation Limiter (qty 1)
- E5-C-04 Pawl Screw (qty 1)
- M3-0-24943-11 Lock Plug Screw (qty 1) (optional)
- EM-0-45826 Top Mounting Bracket (qty 1)
- EM-0-45822 Bottom Mounting Bracket (qty 1)
- Operating Instructions

H3-EM-60-x00 Electronic Locking Swinghandle



1. Handle
2. Tri-Color Status LED
3. Lock Plug (optional)

Features

- Remote lock and unlock capability
- Single or multi-point lock actuation
- Momentary or continuous lock actuation
- Tri-color LED (blue/magenta/red) to indicate lock and handle status
- DIN lock manual override
- Accommodates both left and right doors
- For indoor use only

⚠ **WARNING:** The H3-EM-60-000 is shipped without a lockplug. This product must be paired with a Southco-approved lock to function properly. **Use with an unapproved lockplug voids the product warranty.** Contact Southco for additional support.

Specifications

Supply Voltage (V_{SUPPLY}):	12VDC to 24VDC (**NOTE**: Status LED will blink red if the supply voltage is out of range.)
Standby Current:	50mA maximum at 12VDC
Operating Current:	200mA maximum at 12VDC (with no external mechanical load applied to handle
Stalled Current:	1A maximum (at 12VDC, limited to 2 seconds)
Operating Transit Time:	1 second maximum (**NOTE**: Power must be present during transit times. If power is removed while the lock slide is in transit, it will complete it's cycle when power is restored.)
Electronic Unlock Time:	3 seconds minimum
Open Collector Outputs:	Rated for V_{SUPPLY}, 100mA maximum load
Overall Dimensions:	170.6 x 37 x 50.25mm

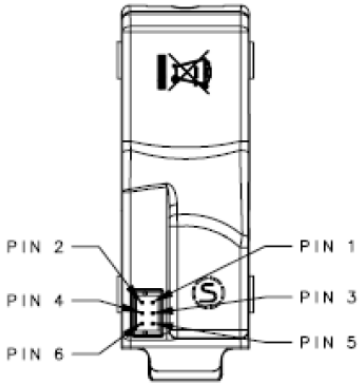
Mounting and Installation

Please refer to Southco trade drawing J-H3-EM-60-100 for mounting and installation details.

⚠ **NOTE:** Use a #1 POZIDRIV® driver when installing the mounting screws. See Southco trade drawing J-H3-EM-60-100 for additional details.

Wiring Diagram

The H3-EM is equipped with a six-position connector on the rear of the unit, shown below



Pin	Description	Note
1	V_{GND}	ground
2	V_{SUPPLY}	12 to 24 VDC power supply input
3	N/C	no connect
4	Control Signal	command input (9VDC up to supply voltage, 100 milliseconds minimum)
5	Electronic Lock Status	open collector output (rated for V_{SUPPLY}, 100mA max. load)
6	Mechanical Lock Status	open collector output (rated for V_{SUPPLY}, 100mA max. load)

⚠ **NOTE:** The mating connector/harness is not provided with the H3-EM-60-x00. Refer to Southco trade drawing J-H3-EM-60-100 for mating connector/harness requirements.

H3-EM Electronic Locking Swinghandle Operating Instructions

Control Input Signal

This signal is used to control the electronic lock slide position.

- for UNLOCKED position: Supply 9VDC minimum (do not exceed supply voltage) for at least 100 milliseconds. The lock will remain unlocked for as long as the signal is present, or a minimum of 3 seconds. Signal timing can typically be adjusted at the access control device. The control signal current draw is less than 10mA.
- for LOCKED position: Supply an open contact or 0VDC (0 to 0.5V)

Electronic Lock Status Output and Mechanical Lock Status Output Signals

Electronic Lock Status Output Signal
This output will be LOW (GND) when the lock slide is electromechanically moved to the unlocked position. It will be in the open collector state (high-impedance) when in the locked position.

Mechanical Lock Status Output Signal
This output will be LOW (GND) when the handle is in the open position or when the keylock in the actuator is manually unlocked. It will be in the open collector state (high-impedance) when in the secured position.

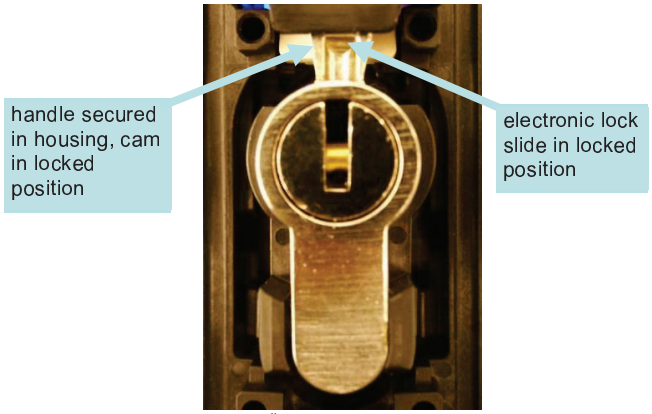
⚠ **NOTE:** These outputs are open collector outputs rated for V_{SUPPLY} with a maximum load of 100mA. To avoid damage to the H3-EM, do not exceed voltage and current ratings.

Status LED and Output Signals

The latch is equipped with a tri-color (blue/magenta/red) LED visible from the front of the latch. This LED provides a visible notification of the latch status. The different latch states are described below. Please refer to the **Control Input Signal**, **Electronic Lock Status Output Signal**, and **Mechanical Lock Status Output Signal** sections for further details on these signals.

Secured
The latch is securely closed, prohibiting access.

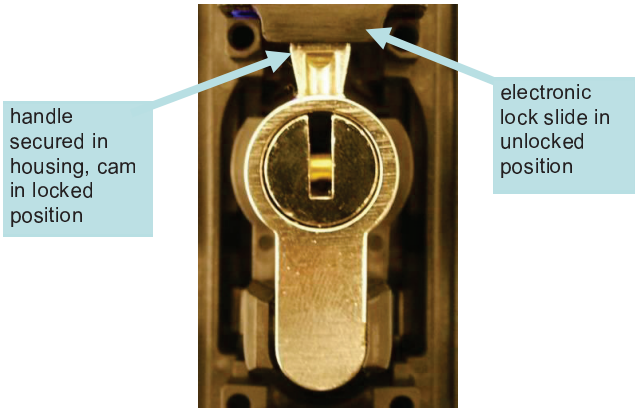
- The Status LED will be solid blue.
- The electronic lock status output is at its open collector state.
- The mechanical lock status output is at its open collector state.



"Secured" State

Electronically Released
The electronic lock slide is in the unlocked position and the handle can be pulled open.

- The Status LED will alternate flashing blue/magenta.
- The electronic lock status output is 0V while the lock slide is in the unlocked position.
- The mechanical lock status output is at its open collector state.

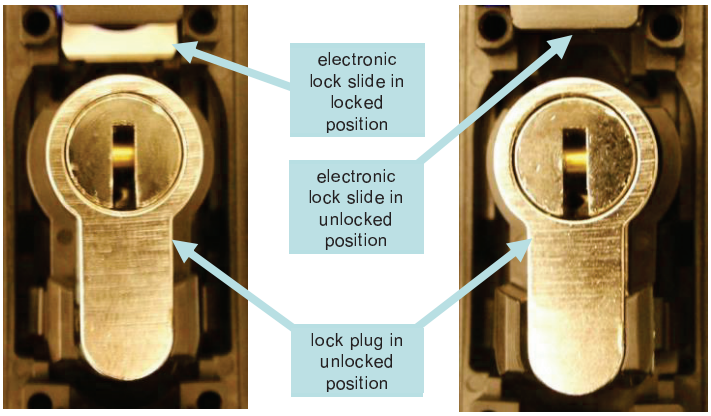


"Electronically Released" State

Mechanically Released
The latch is released by opening the handle or moving the cam from its lock position.

- The Status LED will flash blue.
- The electronic lock status output will be at its open collector state if the electronic lock slide is in the locked position. It will be 0V if the lock slide is in the unlocked position.
- The mechanical lock status output is 0V.

⚠ **NOTE:** The lock sensor is an optical device that senses the presence of the lock pawl. Reflectivity of the lock pawl material can affect sensing. Use only Southco-supplied locks.

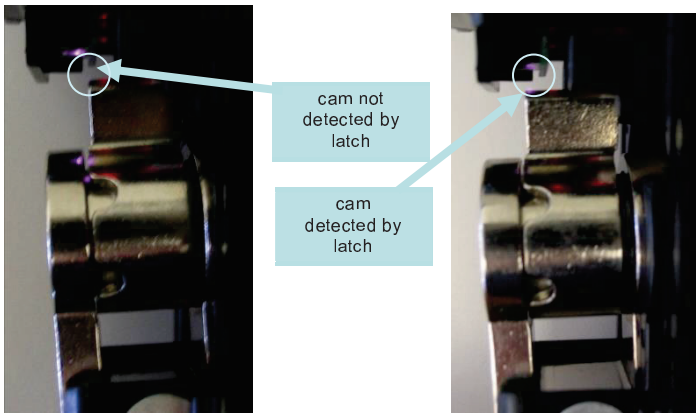


"Mechanically Released" State

H3-EM Electronic Locking Swinghandle
Operating Instructions

Handle not Fully Closed
This is an interim state and may occur while closing the handle when the cam is not secured by the electronic lock slide. The latch is not fully secured during this state.

- The Status LED will alternate flashing blue/red if the cam is not detected. It will flash blue/red/red if the cam is detected, but the lock plate is not in the right position. This could be due to mechanical failure or tampering.
- The electronic lock status output is 0V if the lock slide is in the unlocked position. It will be at its open collector state if it is in the lock position.
- The mechanical lock status output is 0V if the cam is not detected. It will be at its open collector state if it is detected.



"Handle not Fully Closed" State

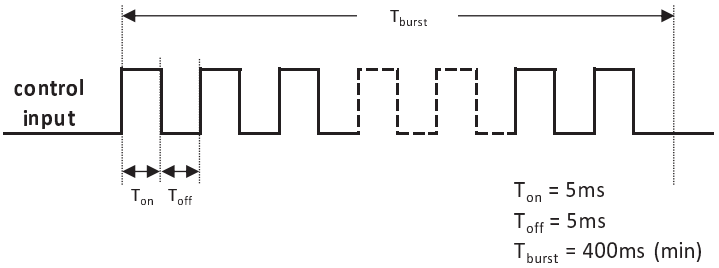
Electronic Lock Slide Error
The electronic lock slide does not respond to the command input signal.

- The Status LED will flash magenta if the latch is secured. It will alternate flashing red/magenta if the latch is mechanically released.
- The electronic lock status output is at its open collector state.
- The mechanical lock status output will be at its open collector state if the cam is in its lock position. It will be 0V if the mechanical key is moved from its lock position.

Error Input Command Sequence

The H3-EM can accept an input command from an external controller to flash the status LED red three times. This feature can be used to indicate that an error event has occurred (e.g. unauthorized access attempt).

The control input signal needs to meet the timing requirements shown below to flash the status LED red.



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FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference and
2) This device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme á la norme NMB-003 du Canada.

For technical support of this product contact: info@southco.com or visit: www.southco.com.