

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
C	17MAY2021	SSW/DMS	PRN: P2021-0976

EM-10-23-410
LATCH BOLT LEFT ORIENTATION SHOWN

NOTES

- A. MATERIAL AND FINISH:
-ENCLOSURE AND LATCH BOLT: ENGINEERING THERMOPLASTIC
- B. ELECTRICAL SPECIFICATIONS:
- POWER: 12 TO 24 VDC (9 TO 26 VDC MAX)
-OPERATING CURRENT: LESS THAN 200 mA @12VDC WITH NO EXTERNAL MECHANICAL LOAD
-MAX CURRENT WITH STALLED LATCH: 1A MAX @24VDC (STALL LIMITED TO 2 SECONDS)
-STANDBY CURRENT: 200µA PLUS OUTPUT SIGNAL CURRENT IF APPLICABLE.
-LATCH WILL MAINTAIN EITHER POSITION IF POWER IS REMOVED (FAILS NEUTRAL).
- CONTROL INPUT:
-CONTROL INPUT CURRENT IS 1 mA MAX.
-FOR RETRACTED POSITION: SUPPLY 12 TO 24 VDC (9 TO 26 VDC MAX) FOR A MINIMUM OF 50 MILLISECONDS. THE LATCH BOLT WILL REMAIN RETRACTED FOR AS LONG AS THE SIGNAL IS PRESENT OR A MINIMUM OF 1 SECOND.
-FOR EXTENDED POSITION: SUPPLY 0 VDC (0 TO 0.5 V)
- OUTPUT SIGNAL:
-OPEN COLLECTOR OUTPUT. RATING 24VDC, 450mA MAX LOAD.
-CAUTION! : TO PREVENT DAMAGE TO THE PRODUCT DO NOT EXCEED MAXIMUM LOADS STATED AND FOLLOW WIRING DIRECTIVES.
-OUTPUT WILL TURN ON WHEN LATCH BOLT IS IN RETRACTED POSITION.
NOTE: EXTERNAL COMPRESSION OF THE LATCH BOLT WILL NOT PRODUCE ANY OUTPUT SIGNAL.
-OUTPUT SLOW FLASHES ON/OFF WHEN LATCH ERROR OCCURS.

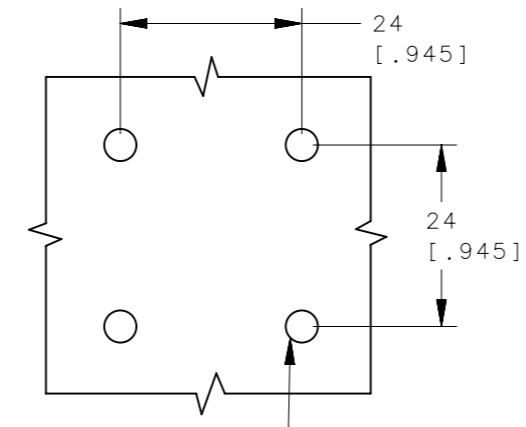
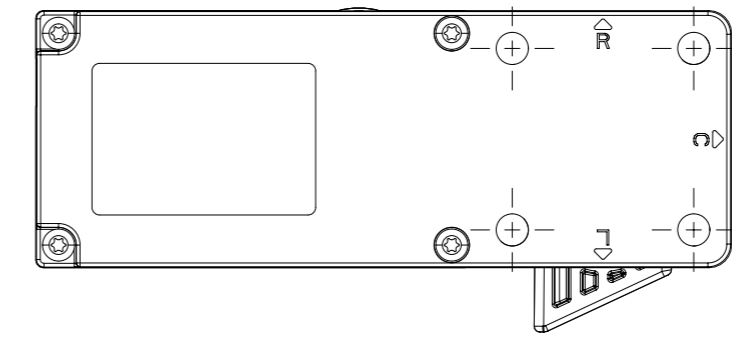
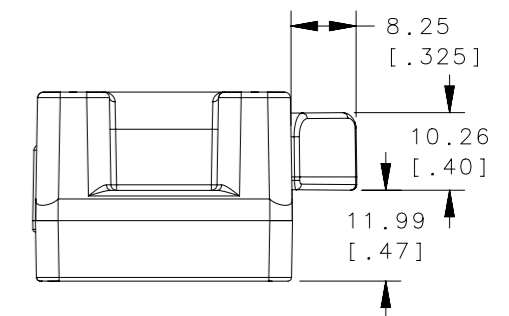
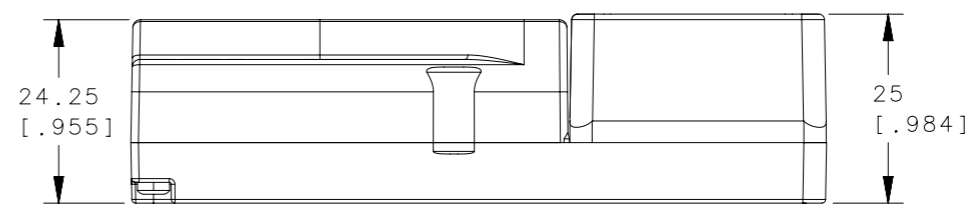
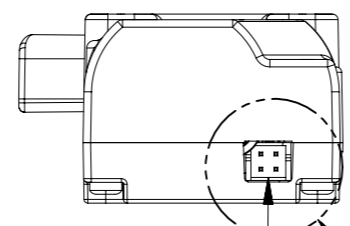
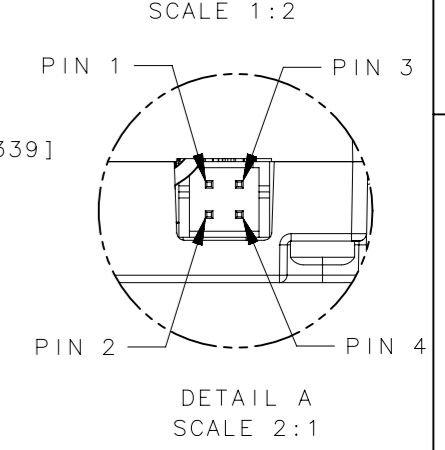
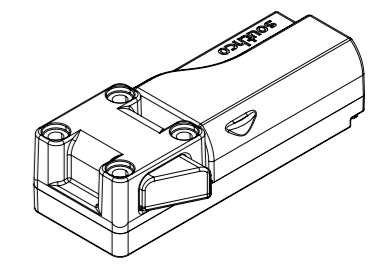
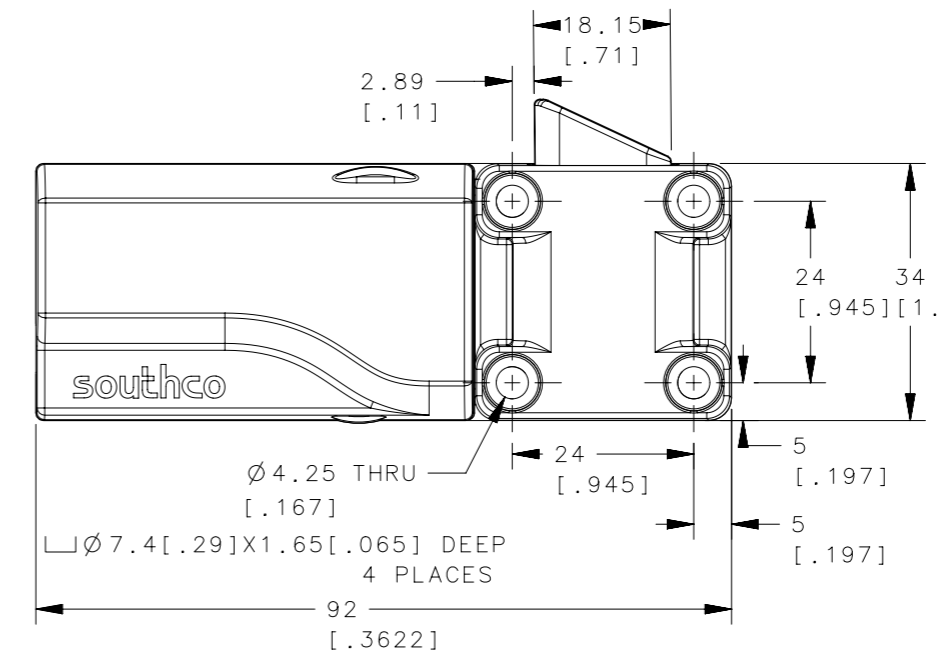
- C. CONNECTIONS:
- FOUR POSITION CONNECTOR
HIROSE ELECTRIC CO. LTD.
-PART NUMBER DF11-4DS-2C CRIMP SOCKET
-PART NUMBER DF11-SERIES CRIMPING CONTACT FOR SOCKET
-24 AWG WIRE MINIMUM RECOMMENDED.
-ORDER EM-10-40 FOR MATE CONNECTOR WITH 300mm WIRES.

- C. CONFIGURATIONS: SEE PAGE 2
- LATCH BOLT CENTER ORIENTATION P/N: EN-10-21-410
 - LATCH BOLT RIGHT ORIENTATION P/N: EN-10-22-410
 - LATCH BOLT LEFT ORIENTATION P/N: EN-10-23-410

- D. MOUNTING
- MOUNT THE UNIT USING FOUR (4) #6-32 OR M4 SCREWS (NOT PROVIDED).
 - CAUTION: DO NOT OPERATE UNIT WITHOUT MOUNTING FASTENERS
 - TO SECURE THE LATCH HOUSING.

- E. PACKAGING
- EM-10-XX-XXX: PACKAGED ONE UNIT PER BOX.
 - EM-10-XX-XXX-1: PACKAGED IN CELL DIVIDERS.

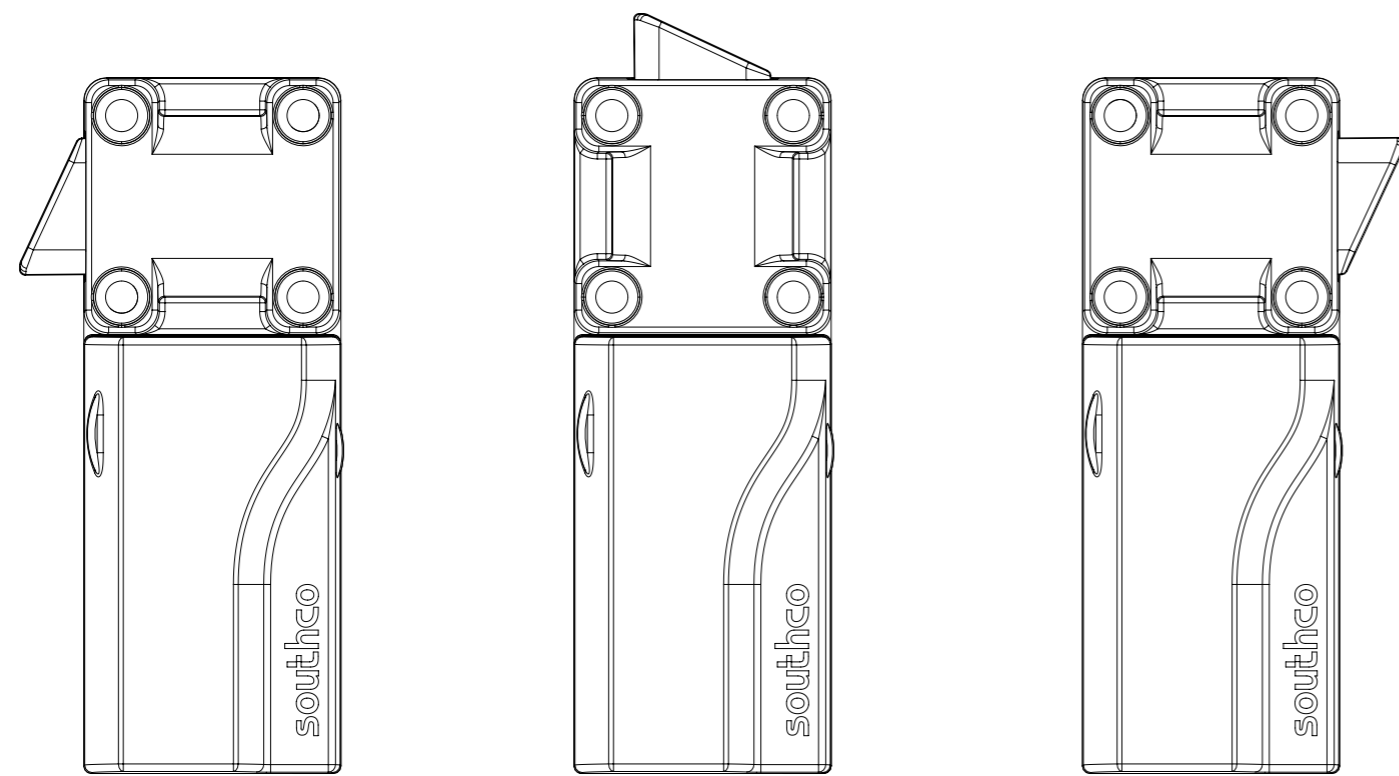
F. RoHS COMPLIANT



EM-10-23-410			
EM-10-22-410			
EM-10-21-410	SEE NOTE A	-	BLACK
PART NUMBER	MATERIAL	HEAT TREATMENT	FINISH

CPB NUMBER	STANDARD	THIRD ANGLE PROJECTION	 CONNECT · CREATE · INNOVATE		
SURFACE AREA		MILLIMETERS [IN]			
VOLUME	TOLERANCES UNLESS OTHERWISE NOTED		DESCRIPTION		
PROPRIETARY ITEM	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.		ELECTRONIC EKEEPER, 24 VOLT, SIDE MOUNT		
EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.	PER ASME Y14.5M-1994	SIZE A3	SYSTEM NX	DWG NO. J-EM-10-23-410	
		DRAWN BY MJS	DATE 29MAY2009	SCALE 1:1	SHEET 1 OF 4

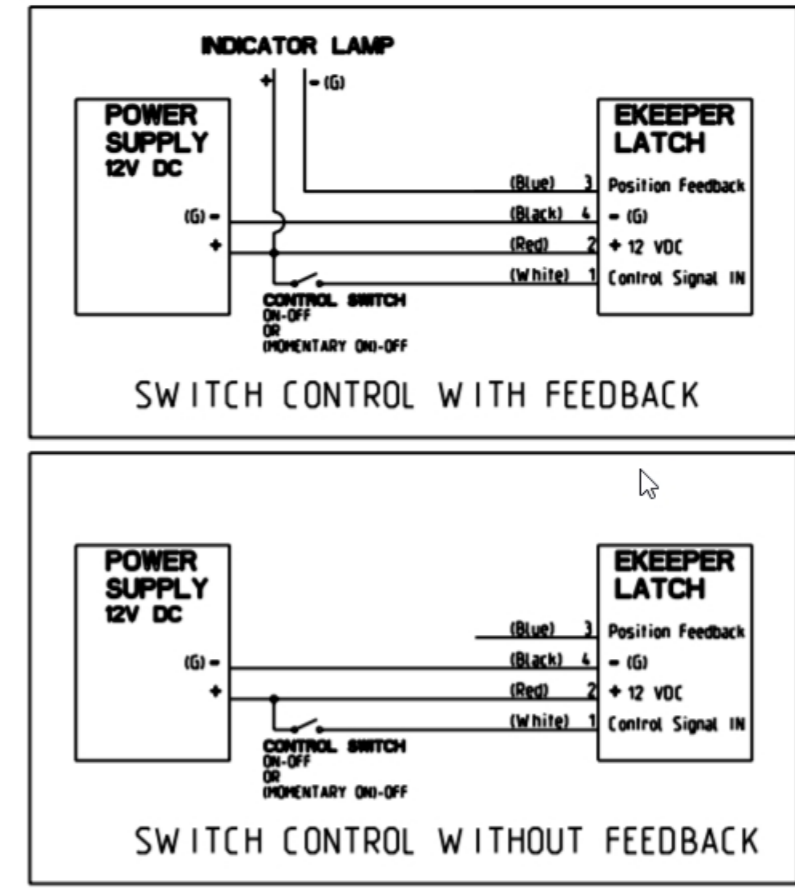
REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
C	17MAY2021	SSW/DMS	PRN: P2021-0976



LATCH BOLT
LEFT ORIENTATION
EM-10-23-XXX-X

LATCH BOLT
CENTER ORIENTATION
EM-10-21-XXX-X

LATCH BOLT
RIGHT ORIENTATION
EM-10-22-XXX-X



WIRING DIAGRAM

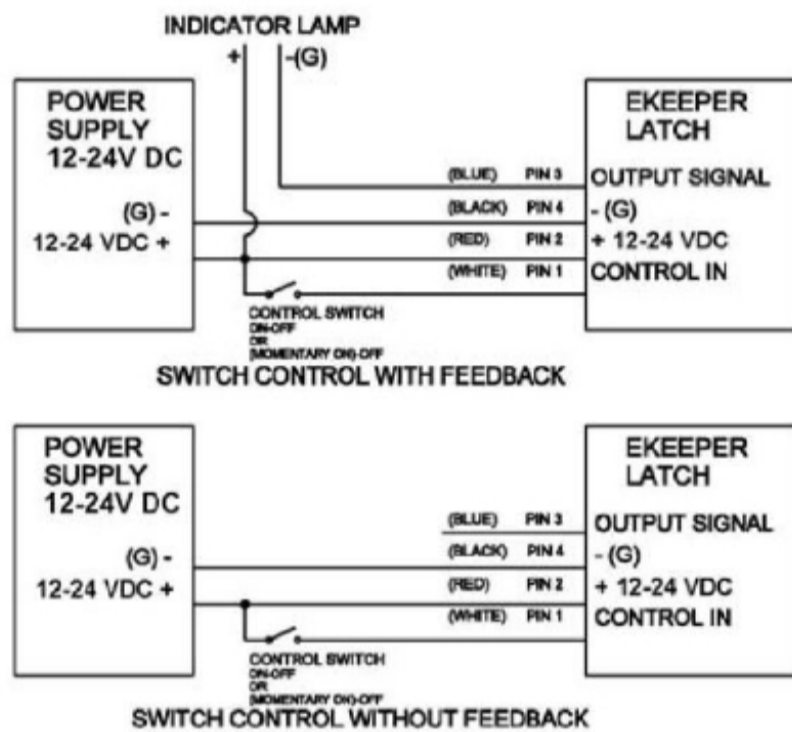
EM-10-23-410			
EM-10-22-410			
EM-10-21-410	SEE NOTE A	-	BLACK
PART NUMBER	MATERIAL	HEAT TREATMENT	FINISH
CPB NUMBER	STANDARD	THIRD ANGLE PROJECTION	southco [®] CONNECT • CREATE • INNOVATE
		MILLIMETERS [IN]	
SURFACE AREA	XXXXXmm ²	TOLERANCES UNLESS OTHERWISE NOTED	
VOLUME	XXXXXmm ³	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	
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.		DESCRIPTION ELECTRONIC EKEEPER, 24 VOLT, SIDE MOUNT
	SIZE A3	SYSTEM NX	DWG NO. J-EM-10-23-410
	DRAWN BY MJS	DATE 29MAY2009	SCALE 1:1
			SHEET 2 OF 4

Applicable models

EM-10-1X-410 Series front mount latch bolt
EM-10-2X-410 Series side mount latch bolt
EM-10-3X-410 Series side mount latch bolt
EM-10-4X-410 Series dead bolt latch bolt

Electrical specifications and requirements:

To operate the latch, it must be properly connected or wired for power, control, and optional feedback signal. An external 12VDC power supply is required to power the latch. The power supply should be sized to provide sufficient current for your application or a minimum of 1.5 Amps per latch.



Power:

Voltage required: 12-24 VDC (9 to 26V)
Typical Operating current: 200mA
Typical Operating transit time: less than 1 second
Max current (stalled latch): 1A Max @12VDC
Standby current: less than 200µA, plus output signal current if applicable. Power must be present during transit times. The latch will maintain either position if power is removed (fails neutral)

Control Input Signal: is required to control the latch bolt position either extended or retracted. The control signal can be changed simply by using a low current switch as wired in the diagram above. The control signal current draw is less than 1mA.

- For RETRACTED position: supply 12-24 VDC (9 to 26V) for a minimum of 50 Milliseconds. The latch bolt will remain retracted for as long as the signal is present or a minimum programmed time of 1 second.
- For EXTENDED position: supply open contact or 0VDC(0 to .5V)

Note:

1. On power up, there is a 870mS delay before the control signal is active.
2. Once the latch bolt extends, there is an 85mS delay before the control signal is active again.

Output signal: is a signal that can be used if desired as feedback to monitor the position of the latch or error mode.

- The output is an open collector output. The maximum load applied must be less than 450mA.

CAUTION! To avoid damage to the product do not exceed the maximum output signal load of 450mA and carefully use the correct polarity shown.

-Output will turn ON when latch bolt is in retracted position. NOTE: External compression of the latch bolt will not produce any output signal.

-Output will slowly flash ON/OFF when a latch error occurs.

The latch error function is a timer that monitors the transit time of the latch when traveling between the EXTENDED or RETRACTED position. The latch will try to reach the new position for two attempts. If the latch does not reach the new position the latch will enter error mode and flash the output to indicate that there is a problem. The error mode is a passive error indicator only and will reset when a new change in position is commanded.

J-EM-10-XX-410 Rev C

The latch will go into error mode:

- if there is too much load, or there is an obstruction preventing the retracting movement of the latch bolt.
- if the output gear is missing or if there is internal damage to the latch.

Electrical connections:

The latch is equipped with the following four position connector:

Hirose Electric Co. Ltd Part Number: DF11-4DP-2DS

Pin 1: Control Input signal

Pin 2: Power (+)

Pin 3: Output signal

Pin 4: Ground (-)

Mate connector required (Not Included)

Hirose Electric Co. Ltd

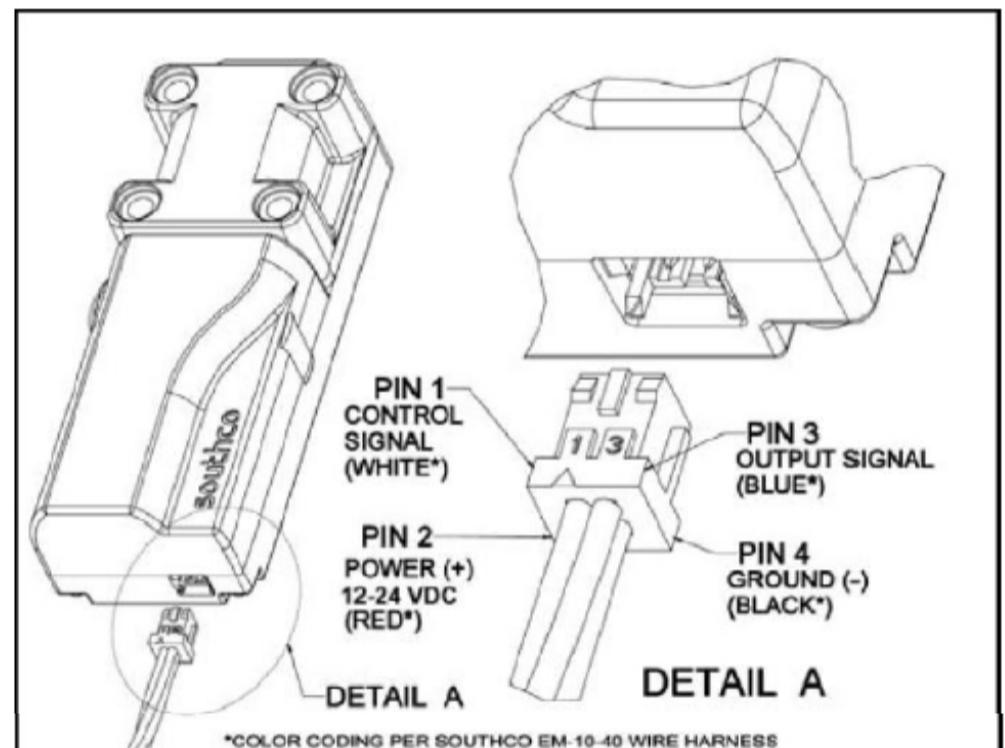
Part Number: DF11-4DS-2C crimp socket

Part Number:DF11-series crimping contact for

socket 24 AWG wire minimum recommended.

OR

Order Southco part Number: EM-10-4X for mate connector with three wire length options. The Mate connector is polarized and should be inserted as shown. Note the markings to indicate the positions.



Mounting:

The latch should be mounted to a rigid and flat surface using four #6 or M4 machine screws of appropriate length for your application (screws not supplied). For additional product dimension see the customer drawing specific to your model available from www.southco.com

CAUTION! The mounting fasteners also serve to permanently secure the latch bolt housing to the base. Do not operate the latch without mounting fasteners to secure the latch housing. The latch bolt has approximately 8mm of travel and will fully retract into the latch bolt housing.

For EM-10-1X-410, EM-10-2X-410 AND EM-10-3X-410 ONLY

When in the EXTENDED position the latch bolt is spring loaded and can be retracted manually by applying an external force. This functionality allows it to be used as a "push-to-close" latch.

For EM-10-4X-410 ONLY

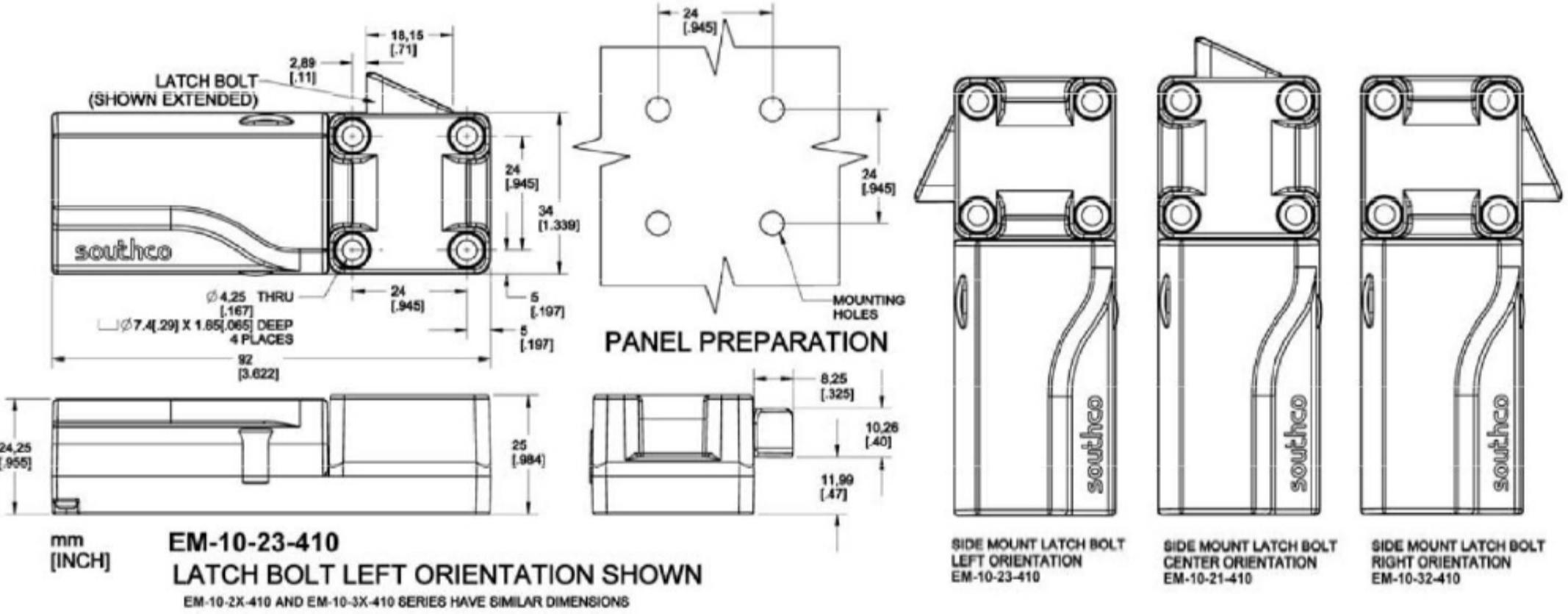
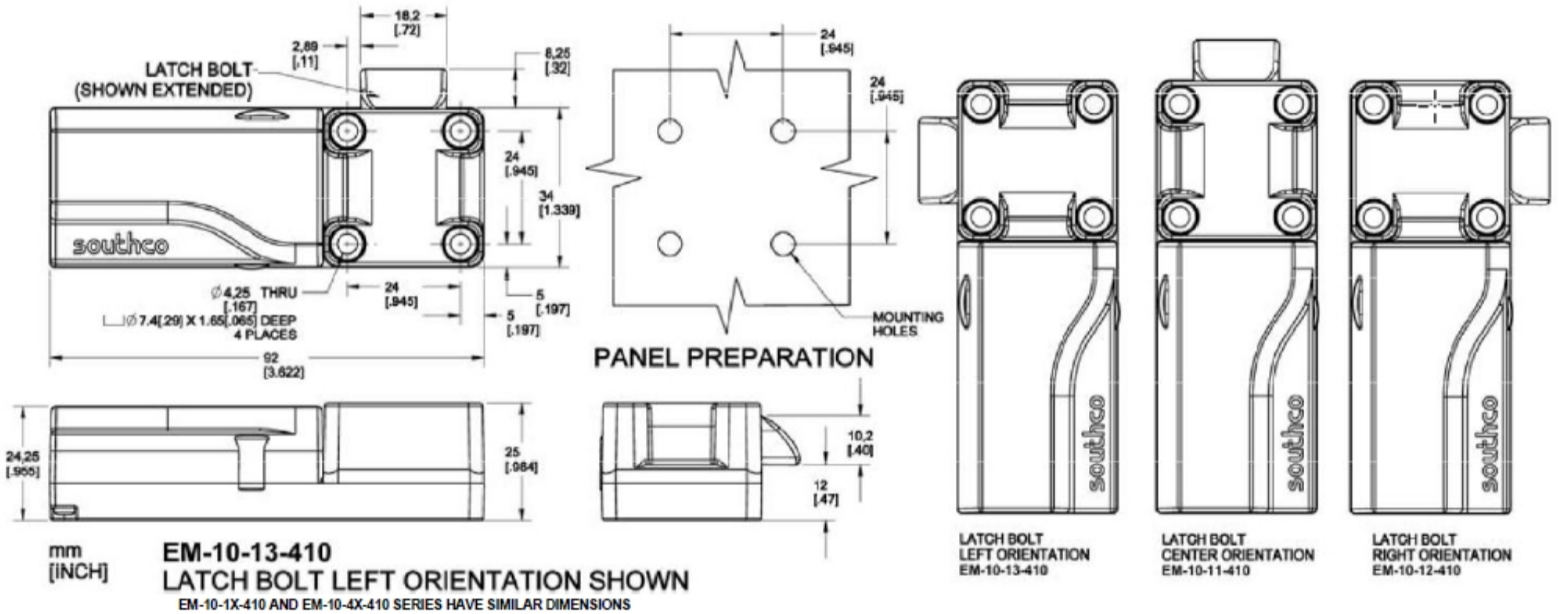
Do not obstruct the motion of the dead bolt. Ensure that the dead bolt is free to travel to its fully extended position. The dead bolt is not spring loaded. Blocking the dead bolt will stall the drive motor and may reduce the life of the product.

The E-keeper product is intended to be used with either a fixed strike or a secondary mechanical latch. For installation recommendations or support please contact customer service. The orientation of the latch bolt can be changed from the factory position to Left, Center or, Right positions, but does require additional parts to do so. Order latch bolt rotation kit Southco part number EM-10-32-85 to change to left center or right orientation.



For technical support of this product contact:

Southco Inc.
210 North Brinton Lake Rd
Concordville, PA 19331-0116
USA
(610) 459-4000
info@southco.com



DATE	REV	DRAWN	DESCRIPTION
20AUG09	A	MJS	Initial Release
08DEC09	B	MJS	PRN: P2009-1404
23FEB10	C	EM	Updated Timing Info