

NOTE:

A. MATERIAL AND FINISH:

HOUSING, CAM, TRIGGER AND PINS: STEEL ZINC PLATED  
ELECTRONIC ACTUATOR: PLASTIC AND ACETALS AND METAL COMPONENTS.

B. ELECTRICAL SPECIFICATION:

OPERATING VOLTAGE: 8 TO 26 VDC  
TYPICAL OPERATING CURRENT: LESS THAN 500 mA AT 12VDC  
PEAK/STALL OPERATING CURRENT: 1A MAX AT 12VDC STALL LIMITED TO 1.4 SECONDS  
STANDBY CURRENT LESS THAN 185 MICROAMP  
CONTROL SIGNAL HIGH (UNLOCK COMMAND): 6 TO 26VDC, 25 mA MAX  
CONTROL SIGNAL LOW (LOCK COMMAND): 0 TO 1VDC (OPEN)  
LATCH TRANSIT TIME TO RELEASE: 600 MILLISECONDS NO LOAD, 1 SECOND MAX.  
OPERATING TEMPERATURE RANGE -20C TO 60C

C. ELECTRICAL CONNECTIONS AND HOOKUP:

A BASIC SWITCH CONTROL ELECTRICAL HOOKUP DIAGRAM IS PROVIDED FOR REFERENCE. CONSULT WITH A SOUTHCO REPRESENTATIVE FOR ADDITIONAL ELECTRICAL HOOKUP INFORMATION.  
-CONNECT POWER, GROUND AND CONTROL SIGNAL WIRES TO AN APPROPRIATE DC POWER SUPPLY.  
-A DC POWER SUPPLY CAPABLE OF SUPPLYING 1 AMP MINIMUM IS RECOMMENDED.  
-POWER MUST BE AVAILABLE TO OPERATE THE LATCH AND MUST REMAIN AVAILABLE DURING THE FULL TRANSIT TIME OF THE LATCH DURING LOCKING OR UNLOCKING.



CAUTION! LATCH CAN BE DAMAGED IF WIRED INCORRECTLY, OR IF IMPROPER VOLTAGE IS APPLIED!

WIRE COLOR CODE/CONNECTOR PIN ASSIGNMENT

PIN1: BROWN: GROUND (-)	PIN4: BLACK: SWITCH COMMON
PIN2: RED: POWER (+12V TYPICAL)	PIN5: BLUE: SWITCH N.O. CONTACT
PIN3: ORANGE: CONTROL SIGNAL (+12V TYPICAL)	PIN6: GREY: SWITCH N.C. CONTACT

D. ELECTRICAL OPERATION:

TO RELEASE OR TRIGGER THE LATCH : PROVIDE THE FOLLOWING CONTROL SIGNAL TO THE ORANGE WIRE OR CONNECTOR PIN 3  
-PROVIDE 6 TO 26VDC (CONTROL SIGNAL HIGH) FOR A MINIMUM OF 50 MILLISECONDS  
-THE CONTROL SIGNAL CAN REMAIN HIGH INDEFINITELY BUT MUST BE LOW TO RE-TRIGGER LATCH  
ALTERNATE OPERATING MODE: TRIGGER ON POWER UP  
-CONNECT CONTROL WIRE (ORANGE) TO POWER WIRE(RED).  
-CONNECT POWER AND GROUND, LATCH WILL TRIGGER UPON POWER UP.  
-POWER MUST BE AVAILABLE FOR A MINIMUM OF 1 SECOND.  
-POWER CAN REMAIN ON INDEFINITELY WITHOUT RE-TRIGGERING.  
-POWER MUST BE REMOVED TO RE-TRIGGER LATCH.

E. LATCH CLOSED POSITION FEEDBACK SWITCH:

-NORMALLY OPEN CONTACT (BLUE WIRE) PROVIDES SWITCH CLOSURE WHEN LATCH CAM IS CLOSED  
-NORMALLY CLOSED CONTACT (GREY WIRE) PROVIDES SWITCH OPEN WHEN LATCH CAM IS CLOSED  
-SWITCH COMMON (BLACK WIRE)  
SWITCH RATING: 3A AT 12 VDC MAX



WARNING SWITCH CIRCUIT IS NOT FUSED OR ELECTRICALLY PROTECTED! USE APPROPRIATE EXTERNAL PROTECTION. WIRE SWITCH CORRECTLY PER ELECTRICAL HOOKUP DIAGRAM AND DO NOT SHORT CIRCUIT. A SHORT CIRCUIT CAN DAMAGE LATCH AND MAY POSE AN ELECTRICAL FIRE HAZARD!

F. OPTIONAL LATCH CONNECTOR:

MANUFACTURER: MOLEX, SERIES MICROFIT 3.0  
-CONNECTOR RECEPTICAL 6 POSITION 3MM VERTICAL DUAL: MOLEX P/N: 43025-0600  
-CONTACTS: FEMALE CRIMP TERMINAL (SOCKET) MOLEX P/N: 43030-0007  
WIRE: 24 AWG STYLE 1007  
WIRE LENGTH: SEE TABLE FOR AVAILABLE LENGTHS

G. MATE CONNECTOR (NOT SUPPLIED)

MANUFACTURER: MOLEX, SERIES: MICROFIT 3.0  
-CONNECTOR PLUG 6 POSITION 3MM VERTICAL DUAL MOLEX P/N: 43020-0601  
-RECOMMENDED CONTACTS (6 REQUIRED): MOLEX, MALE CRIMP TERMINAL (PIN) MOLEX P/N 43031-0007  
-RECOMMENDED WIRE GAGE: 24 AWG

H. MOUNTING:

-MOUNT THE LATCH SECURELY USING TWO (2) SCREWS IN THE MOUNTING HOLES PROVIDED (SCREWS NOT PROVIDED)  
-MOUNTING HOLES ARE AVAILABLE WITH 1/4-20 UNC THREAD, M6 x 1 THREAD OR Ø7.0 THRU HOLE  
-MAXIMUM ALLOWABLE TORQUE ON THREADED MOUNTING SCREWS IS 650 N.cm (57.5 in. lbs)

I. MECHANICAL OPERATION

THE LATCH IS PROVIDED WITH A MECHANICAL TRIGGER TO RELEASE THE LATCH. THE MAXIMUM TRAVEL OF THE TRIGGER IS SHOWN IN DETAIL A. THE TRIGGER MOVES THROUGH ITS FULL TRAVEL DURING ELECTRICAL OPERATION OF THE LATCH.



CAUTION IT IS IMPORTANT TO NOT OBSTRUCT THE MOTION OF THE TRIGGER DURING ELECTRICAL OPERATION TO PREVENT LONGTERM DAMAGE TO THE ELECTRICAL COMPONENTS IN THE LATCH.

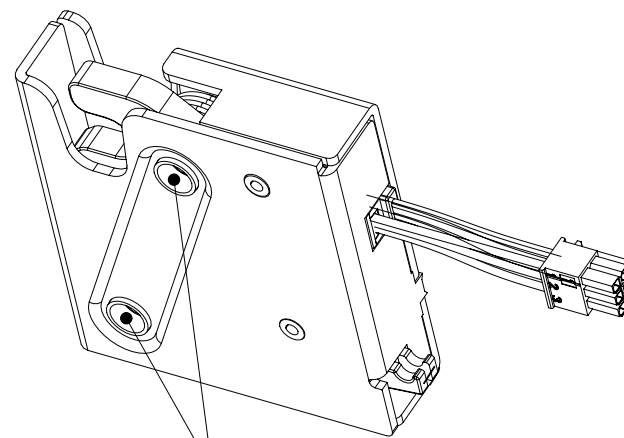
TWO HOLES PROVIDED CAN BE USED TO MOUNT MECHANICAL OVERRIDE LINKAGE RETAINING BRACKETS. STANDARD 1/8" BLIND RIVETS CAN BE USED FOR FASTENING. FOLLOW MAX INSERTION DEPTH INDICATED AND ENSURE THAT NO PARTICLES ENTER THE LATCH. CONTACT SOUTHCO FOR MECHANICAL RELEASE CABLES AND ACTUATORS. AN OPTIONAL KIT WITH ONE CABLE MOUNTING BRACKET AND TWO RIVETS IS AVAILABLE AS PART NUMBER R4-EM-52 SEE CUSTOMER DRAWING J-R4-EM-52 FOR MORE INFORMATION

J. STRIKER BOLT ASSEMBLY SOLD SEPARATELY

STRIKER BOLT PART NUMBER: R4-90-121-10, REFER TO CUSTOMER DRAWING J-R4-90-121 FOR ADDITIONAL INFORMATION

K. PACKAGED IN INDIVIDUAL BOXES OR ADD -1 TO PART NUMBER FOR BULK PACKAGING

EXAMPLE: R4-EM-11-161  
R4-EM-11-161-1

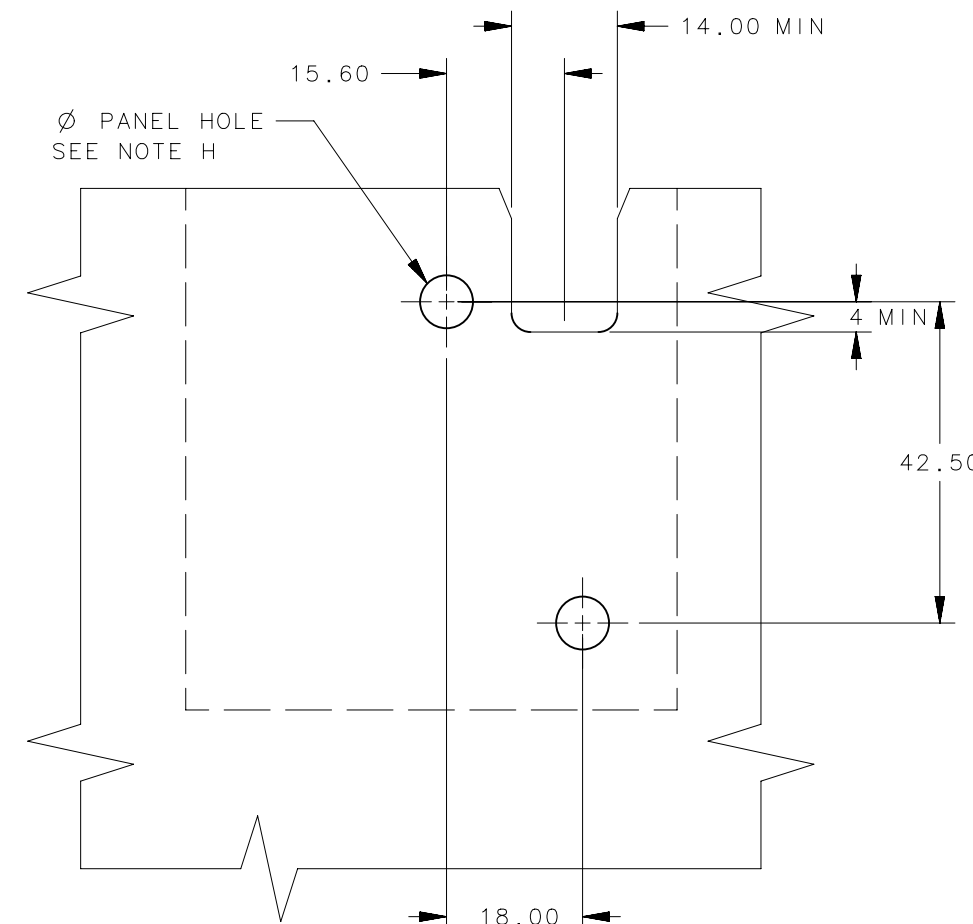
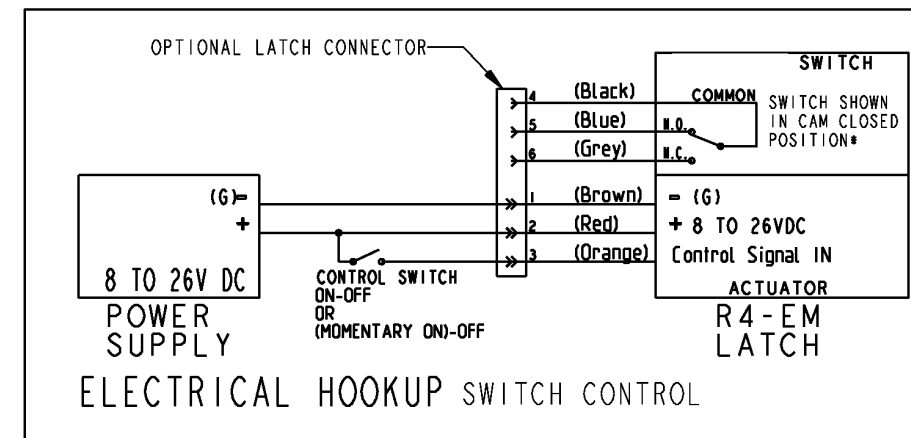


NOTE: MOUNTING HOLES ARE RECESSED 1.3 MM ON THIS SIDE



PIN 1 INDICATOR LATCH CONNECTOR

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
E	25SEP2013	DJK/WJB	PRN: P2013-1922



PANEL PREPARATION

THIRD ANGLE PROJECTION		<p>CONNECT · CREATE · INNOVATE</p>	
MILLIMETERS [IN]			
TOLERANCES UNLESS OTHERWISE NOTED		DESCRIPTION R4-EM ROTARY, SIDE TRIGGER, WITH MICROSWITCH	
ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.		SIZE B	SYSTEM NX
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.		DWG NO. J-R4-EM-11-161	DATE 11NOV2012
PER ASME Y14.5M-1994		SCALE 1:1	SHEET 2 OF 2

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- WIRE COLOR CODE/CONNECTOR PIN ASSIGNMENT
- |   |                                 |
|---|---------------------------------|
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D. ELECTRICAL OPERATION:

TO UNLOCK OR RELEASE THE LATCH:  
-PROVIDE THE FOLLOWING CONTROL SIGNAL TO THE ORANGE WIRE OR CONNECTOR PIN 3  
-PROVIDE 6 TO 26VDC (CONTROL SIGNAL HIGH) FOR A MINIMUM OF 50 MILLISECONDS  
-THE CONTROL SIGNAL CAN REMAIN HIGH INDEFINITELY  
-THE LATCH WILL STAY UNLOCKED FOR A MINIMUM OF 1 SECOND OR AS LONG AS THE SIGNAL IS HIGH  
TO LOCK THE LATCH:  
-PROVIDE THE FOLLOWING CONTROL SIGNAL TO THE ORANGE WIRE OR CONNECTOR PIN 3  
-PROVIDE 0 TO 1VDC (CONTROL SIGNAL LOW). POWER MUST BE AVAILABLE DURING TRANSIT TO LOCKED POSITION

NOTE:

-THE DOOR IS NOT LATCHED WHEN IN THE UNLOCKED POSITION. ENSURE THAT YOUR DOOR IS BIASED CLOSED OR DETENTED IN THE CLOSED POSITION. THE CAM MUST REMAIN IN THE CLOSED POSITION TO RE-LOCK  
-FROM THE LOCKED POSITION WITH THE CAM IN THE OPEN POSITION THE DOOR CAN BE PUSHED TO CLOSE AND WILL LOCK

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WIRE: 24 AWG STYLE 1007

WIRE LENGTH: SEE TABLE FOR AVAILABLE LENGTHS

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H. MOUNTING:

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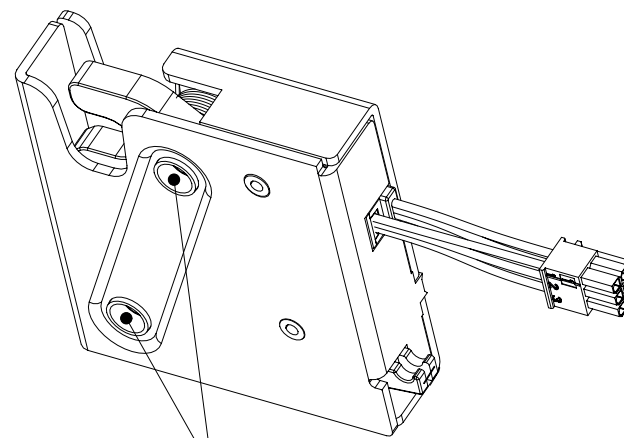
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J. STRIKER BOLT ASSEMBLY SOLD SEPARATELY

STRIKER BOLT PART NUMBER: R4-90-121-10, REFER TO CUSTOMER DRAWING J-R4-90-121 FOR ADDITIONAL INFORMATION

K. PACKAGED IN INDIVIDUAL BOXES OR ADD -1 TO PART NUMBER FOR BULK PACKAGING

EXAMPLE: R4-EM-21-161  
R4-EM-21-161-1

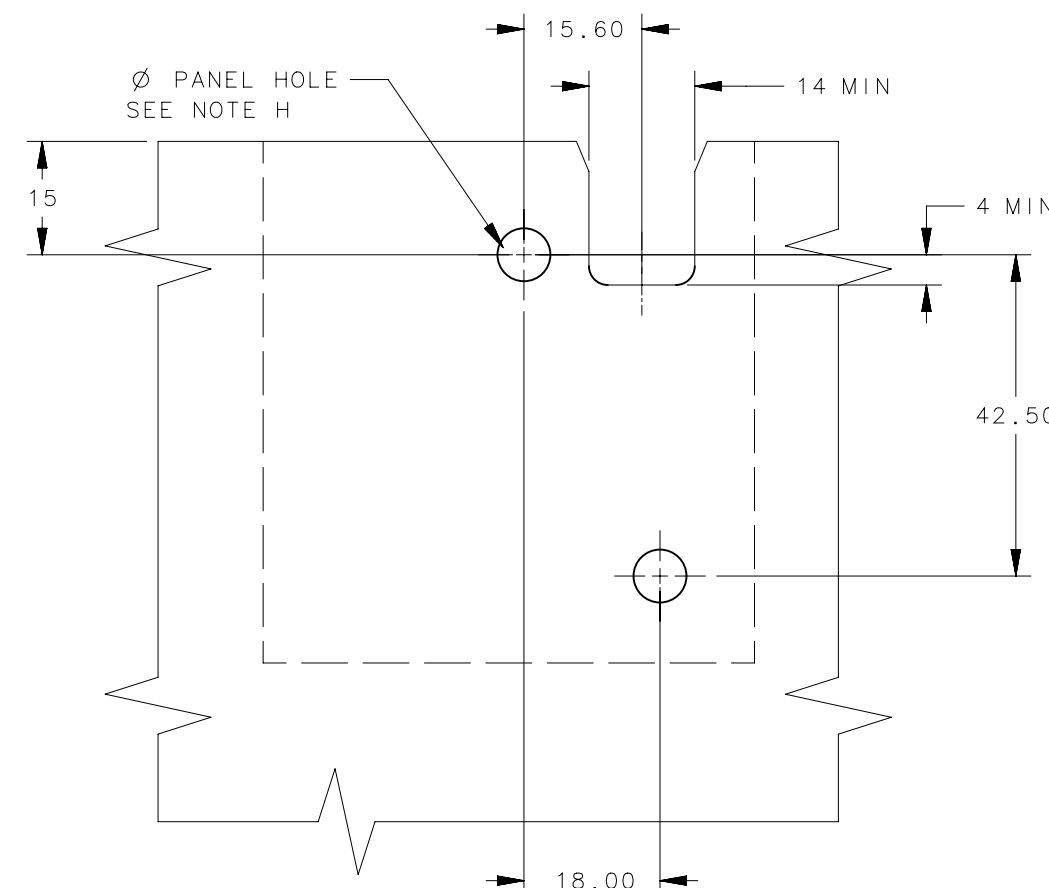
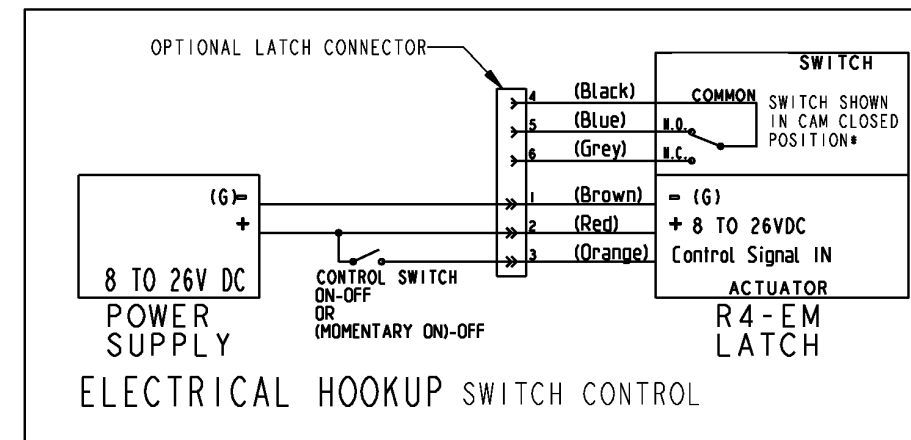


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PIN 1 INDICATOR LATCH CONNECTOR

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REV	DATE	BY	DESCRIPTION
D	25SEP2013	DJK/WJB	PRN: P2013-1922



PANEL PREPARATION

THIRD ANGLE PROJECTION				
MILLIMETERS [IN]	DESCRIPTION			R4-EM ROTARY, SIDE TRIGGER, WITH MICROSWITCH
TOLERANCES UNLESS OTHERWISE NOTED	SIZE	SYSTEM	DWG NO.	
ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	B	NX	J-R4-EM-21-161	
	PER ASME Y14.5M-1994	DRAWN BY	DATE	
PROPRIETARY ITEM	GGG	24SEP2009	SCALE	
EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.	1:1	SHEET	2 OF 2	

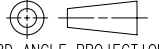
**southco**

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.

R4-EM ROTARY LATCH

DATE	DRAWN	CHKD	SCALE	DRAWING NUMBER
22JAN2009	MJS	GG	.5:1	TD-R4-EM-1-J

REV	DATE	DRAWN/CHKD	DESCRIPTION
C	28JUL2011	MJS/WB	ADDED TR R4-117

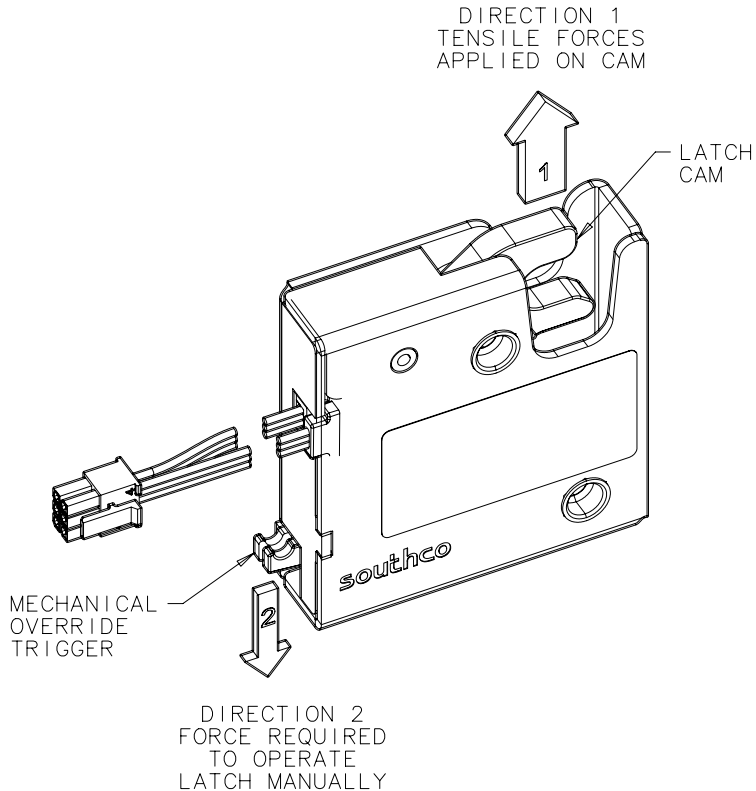
THIRD ANGLE PROJECTION  A4 PAPER SIZE

SOUTHCO PERFORMANCE GUIDELINES  
 THE PERFORMANCE GUIDELINES SHOWN ON THIS PAGE ARE SUPPLIED AS A GENERAL GUIDE ONLY, AS CONDITIONS VARY WITH EACH APPLICATION AND METHOD OF INSTALLATION. STRENGTH DATA GIVEN IS FOR FAILURE OF THE PRODUCT OR FOR SUFFICIENT DEFORMATION TO MAKE THE PRODUCT INOPERABLE. NO SAFETY FACTOR HAS BEEN APPLIED. IT IS RECOMMENDED THAT THE USER REQUEST A PRODUCT SAMPLE FOR TESTING TO DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE PURPOSE INTENDED AND USER'S PARTICULAR APPLICATION.

TENSILE FORCE ON CAM	CYCLE LIFE
44 N (10 lb.)	100,000

Performance values for R4-EM-1X-XXX  
 See J-R4-EM-11-151 and J-R4-EM-11-161 for latch dimensions.

1. Testing performed using part number R4-EM-11-161.
2. TENSILE FORCES (Direction 1) are applied at the nominal lateral position (zero misalignment).
3. MAXIMUM TENSILE FORCE (Direction 1) on the cam that the latch can release (open) electronically one time: 1557 N (350 lbf).
4. AVERAGE ULTIMATE TENSILE LOAD (Direction 1) on the cam before latch can fracture: 6770 N (1522 lbf).
5. AVERAGE ULTIMATE TENSILE LOAD (Direction 1) when used with Southco Striker Bolt R4-90-121-10: 4890 N (1100 lb.).
6. TENSILE FORCE (Direction 2) required on the mechanical override trigger to operate (open) the latch manually with a 100 N (22 lbf) tensile force on the cam: 4 N (0.9 lbf).



REF: TR R4-93  
 TR R4-4867  
 TR R4-117 (SUPERCEDES TEST #12 IN TR R4-93)