

Kliksluitting, elektronisch voor buiten toepassingen (R4-EM)

NOTES:

A. MATERIAL AND FINISH
HOUSINGS: STEEL ZINC-NICKEL PLATED. (OPTIONAL 304 STAINLESS STEEL)
CAM AND TRIGGERS: STEEL PLATED. (OPTIONAL STAINLESS STEEL POWDER METAL 19.72% CHROMIUM / 17.82% NICKEL)
PINS: STEEL ZINC-NICKEL PLATED. (OPTIONAL 304 STAINLESS STEEL)
SPRINGS: 304 STAINLESS STEEL
ELECTRONIC ACTUATOR: PLASTIC (PC/ABS AND ACETAL), SILICONE AND BUNA SEALS, AND METAL COMPONENTS

B. ELECTRICAL SPECIFICATIONS:
OPERATING VOLTAGE: 12 TO 24 VDC NOMINAL
TYPICAL OPERATING CURRENT: LESS THEN 500 MILLIAMPS AT 12 VDC
PEAK / STALL OPERATING CURRENT: 1A MAX (STALL LIMITED TO 1.4 SECONDS)
TOTAL STANDBY CURRENT: LOCKED: LESS THAN 100 MICROAMPS
UNLOCKED: LESS THEN 10 MILLIAMPS AT 12 TO 24 VDC
CONTROL SIGNAL HIGH (UNLOCK COMMAND): 6 VDC TO OPERATING VOLTAGE, 5.5 MILLIAMPS MAX
CONTROL SIGNAL LOW (LATCHED COMMAND): 0 TO 1 VDC (OPEN)
LATCH TRANSIT TIME TO RELEASE: 600 MILLISECONDS NO LOAD, 1.4 SECOND MAX
OPERATING TEMPERATURE RANGE: -40C TO +80C

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 12 TO 24 VDC AT 1 AMP MINIMUM PER LATCH 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: SEE CONNECTOR PINOUT TABLE AND PIN LOCATION DETAILS

CONNECTOR PINOUT		
PIN	WIRE COLOR	FUNCTION
1	BROWN	GROUND (-)
2	RED	POWER (+)
3	ORANGE	CONTROL SIGNAL
4	BLACK	SWITCH COMMON
5	BLUE	SWITCH N.O.
6	GREY	SWITCH N.C.

SEALED CONNECTOR PIN LOCATION

NON-SEALED CONNECTOR PIN LOCATION

ELECTRICAL HOOKUP (SWITCH CONTROL)

R4-EM LATCH

SEE PAGE 1 FOR SWITCH SCHEMATICS

D. ELECTRICAL OPERATION:
TO UNLOCK OR RELEASE THE LATCH:
PROVIDE THE FOLLOWING CONTROL SIGNAL TO THE ORANGE WIRE OR CONNECTOR PIN 3
- PROVIDE 12 TO 24 VDC (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 20 MILLISECONDS 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 CONTROL SIGNAL LOW FOR 50 MILLISECONDS. 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 CLOSED AND WILL LOCK.

E. OPTIONAL POSITION FEEDBACK SWITCHES:
- NO SWITCH: MODELS WITHOUT SWITCH WILL NOT HAVE BLACK, BLUE OR GREY WIRES
- SINGLE SWITCH: CAM ONLY STATUS INDICATOR CIRCUIT. SEE PAGE 1 OF 4 FOR OUTPUT AND SCHEMATIC.
- DUAL SWITCH: CAM AND TRIGGER LATCH STATUS INDICATOR CIRCUIT, AND CAM STATUS INDICATOR CIRCUIT.
SEE PAGE 1 OF 4 FOR OUTPUT AND SCHEMATIC.
SWITCH RATINGS: 3 AMP MAX AT 12 VDC
WARNING! SWITCH CIRCUIT IS NOT FUSED OR ELECTRICALLY PROTECTED! USE APPROPRIATE EXTERNAL CIRCUIT 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!

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
A	31MAY2013	DJK/CLB	INITIAL RELEASE

F. OPTIONAL NON-SEALED 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: 22 AWG STYLE AWM 1569
WIRE LENGTH: SEE TABLE FOR AVAILABLE LENGTHS
MATE FOR NON-SEALED CONNECTOR (NOT SUPPLIED)
MANUFACTURER: MOLEX, SERIES: MICROFIT 3.0
- CONNECTOR PLUG 6 POSITION 3 mm VERTICAL DUAL, MOLEX P/N: 43020-0601
- RECOMMENDED CONTACTS (6 MAX REQUIRED): MOLEX, MALE CRIMP TERMINAL (PIN), MOLEX P/N: 43031-XXXX
- RECOMMENDED WIRE GAGE: 22 AWG

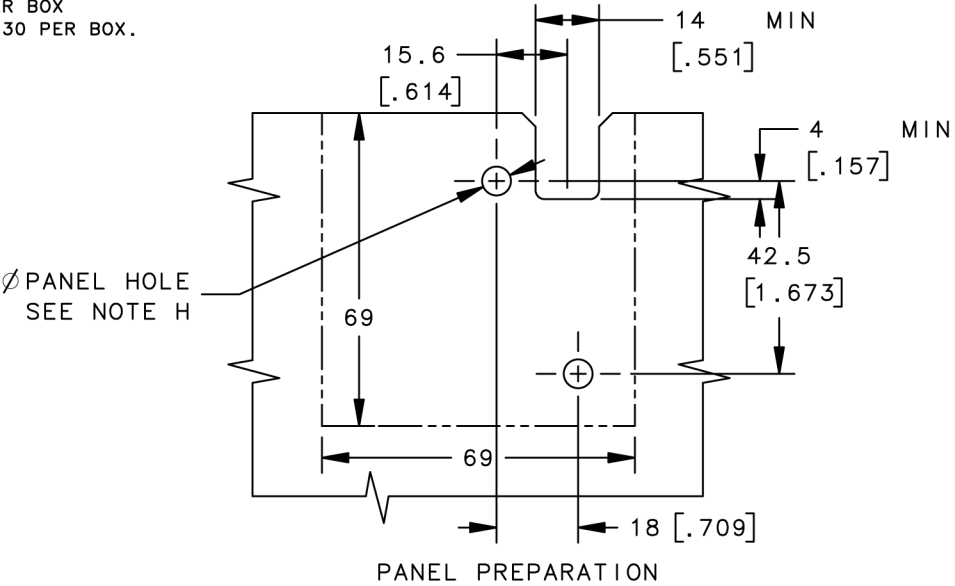
G. OPTIONAL SEALED LATCH CONNECTOR:
MANUFACTURER: MOLEX, SERIES: MX150
- CONNECTOR SEALED MALE, 6 POSITION DUAL ROW, 3.50mm PITCH MX150, POLARIZATION A, MOLEX P/N: 33482-0601
- CONTACTS: MOLEX, MALE CRIMP TERMINAL, TIN, MOLEX P/N: 33000-0003
WIRE: 22 AWG STYLE AWM 1569
WIRE LENGTH: SEE TABLE FOR AVAILABLE LENGTHS
MATE FOR SEALED LATCH CONNECTOR (NOT SUPPLIED)
MANUFACTURER: MOLEX, SERIES: MX150
- CONNECTOR SEALED FEMALE, 6 POS DUAL ROW, 3.50 mm PITCH MX150, POLARIZATION A, MOLEX P/N: 33472-0601
- RECOMMENDED CONTACTS (6 MAX REQUIRED): MOLEX, FEMALE CRIMP TERMINAL, TIN 18-22 AWG, MOLEX P/N: 33012-2003
- RECOMMENDED WIRE GAGE: 22 AWG

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

I. MECHANICAL OPERATION:
THE LATCH IS PROVIDED WITH A MECHANICAL TRIGGER TO RELEASE THE LATCH.
SEE TRIGGER DETAIL VIEWS FOR SIDE AND REAR TRIGGER MODELS ON PAGE 3 AND 4 FOR TRIGGER TRAVELS.
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 LONG TERM 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 P/N: R4-EM-52 FOR SIDE TRIGGER CONFIGURATION OR P/N: R4-EM-87 FOR REAR TRIGGER CONFIGURATION. SEE CUSTOMER DRAWING J-R4-EM-52 OR J-R4-EM-87 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-XXX-XXX: PACKAGED ONE UNIT PER BOX
R4-EM-XXX-XXX-1: PACKAGED IN BULK, 30 PER BOX.



THIRD ANGLE PROJECTION	MILLIMETERS [IN]			
	TOLERANCES UNLESS OTHERWISE NOTED			
	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.			
SURFACE AREA	PER ASME Y14.5M-1994	SIZE	SYSTEM	DWG NO.
VOLUME		B	NX	J-R4-EM-71-161
PROPRIETARY ITEM		DRAWN BY	GGG/	DATE
EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.			03DEC2012	SCALE
			1:1	SHEET
				4 OF 4

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
A	22NOV2014	DMS/GGG	PRN: P2014-2386

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'S RECOMMENDED THAT THE USER REQUEST A PRODUCT SAMPLE FOR TESTING TO DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE PURPOSE INTENDED AND THE USER'S PARTICULAR APPLICATION.

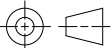
PERFORMANCE VALUES FOR R4-EM-X7XX-XXX AND R4-EM-X7XX-XXX-B
SEE J-R4-EM-7-1

1. TENSILE FORCES (DIRECTION 1) ARE APPLIED AT THE NOMINAL LATERAL POSITION (ZERO MISALIGNMENT).
2. CYCLE LIFE WITH 44 N (10 lbf) TENSILE FORCE (DIRECTION 1) ON CAM :
80,000 CYCLES AT AMBIENT TEMPRETURE.

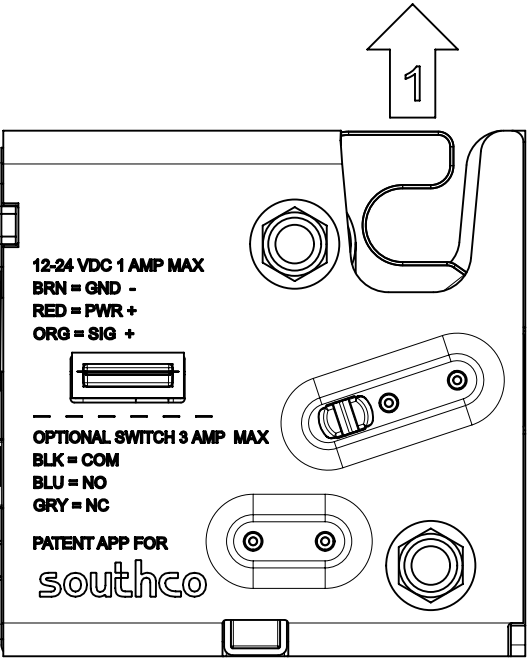
MODELS TESTED: R4-EM-71-163
 R4-EM-R722-163
 R4-EM-71-163-B
 R4-EM-R712-163-B

3. MAXIMUM TENSILE FORCE (DIRECTION 1) ON THE CAM THAT THE LATCH CAN RELEASE (OPEN) ELECTRICALLY ONE TIME:
1557 N (350 lbf) MINIMUM.
4. AVERAGE ULTIMATE TENSILE LOAD (DIRECTION 1) ON THE CAM BEFORE LATCH CAM FAILURE:
5300 N (1191 lbf) FOR STEEL MODELS R4-EM-X7XX-XXX
4980 N (1119 lbf) FOR STAINLESS STEEL MODELS R4-EM-X7XX-XXX-B
5. AVERAGE ULTIMATE TENSILE LOAD (DIRECTION 1)WHEN USED WITH SOUTHCO STRIKER BOLT R4-90-121-10: 4420 N (993 lbf).
6. AVERAGE TENSILE FORCE (DIRECTION 2 or 3) REQUIRED ON THE MECHANICAL OVERRIDE TRIGGER TO OPERATE (OPEN) THE LATCH MANUALLY WITH A TENSILE FORCE ON THE CAM:

AVERAGE FORCE TO OPERATE LATCH WITH MECHANICAL OVERRIDE VS. LATCH CAM LOAD			
FORCE 1 (N) ON CAM	100 N (22.48 lbf)	400 N (89.92 lbf)	700 N (157.36 lbf)
FORCE 2 (N) ON SIDE TRIGGER MECHANICAL OVERRIDE	4.0 N (0.9 lbf)	11.8 N (2.7 lbf)	15.7 N (3.5 lbf)
FORCE 3 (N) ON REAR TRIGGER MECHANICAL OVERRIDE	17.0 N (3.8 lbf)	38.6 N (8.7 lbf)	58.7 N (13.2 lbf)

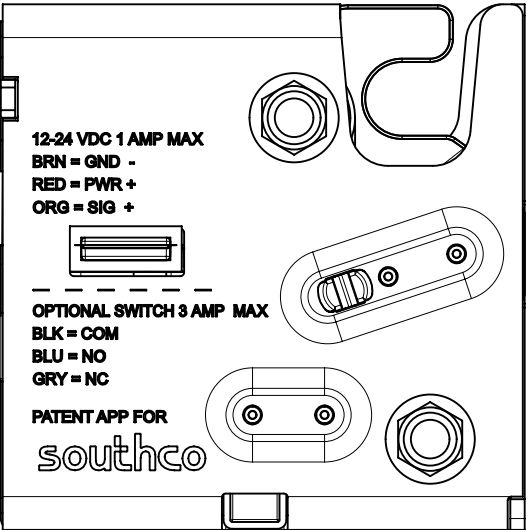
	THIRD ANGLE PROJECTION					southco® CONNECT • CREATE • INNOVATE			
	MILLIMETERS [IN]								
	TOLERANCES UNLESS OTHERWISE NOTED	DESCRIPTION							
SURFACE AREA	UP TO 0.5 ±0.05	R4-EM 7 SERIES ROTARY LATCH							
VOLUME	OVER 0.5 UP TO 6 ±0.1								
	OVER 6 UP TO 30 ±0.2								
	OVER 30 ±0.3								
PROPRIETARY ITEM	OVER 30 ±0.3	SIZE	SYSTEM	DWG NO.					
EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.	ANGLES ±1°	A3	NX	TD-R4-EM-7-1-J					
	PER ASME Y14.5M-1994	DRAWN BY		DATE		SCALE		SHEET	
		DJK/GGG		03MAR20014		1:1		1 OF 1	

DIRECTION 1
TENSILE FORCES
APPLIED TO CAM



DIRECTION 2
FORCES REQUIRED
TO OPERATE LATCH
MANUALLY

SIDE TRIGGER
MECHANICAL OVERRIDE
TRIGGER



DIRECTION 3
FORCES REQUIRED
TO OPERATE LATCH
MANUALLY

REAR TRIGGER
MECHANICAL OVERRIDE
TRIGGER

REFERENCE: trR4-15267
trR4-16759
trR4-19432