

87654321

NOTES:

1. MATERIAL AND FINISH:
ELECTRIC ACTUATOR: PLASTIC (NYLON AND ACETAL), AND METAL COMPONENTS

2. ELECTRICAL SPECIFICATIONS: SEE TABLE 1 - ELECTRICAL SPECIFICATIONS

- POWER MUST BE AVAILABLE TO OPERATE THE ACTUATOR AND MUST REMAIN AVAILABLE DURING THE FULL TRANSIT TIME OF THE ACTUATOR DURING EXTENDING OR RETRACTING.
- TRIGGER COMMAND: ACTUATOR WILL FULLY EXTEND AND THEN BE FREE TO RETRACT
- IF THE CONTROL SIGNAL PULSE IS LESS THAN THE MINIMUM PULSE TIME THE ACTUATOR WILL NOT START ITS CYCLE.
- IF THE CONTROL SIGNAL PULSE IS LONGER THAN THE MAXIMUM PULSE TIME THE ACTUATOR MAY CYCLE MORE THAN ONCE.
- THE ACTUATOR WILL EXTEND AND PUSH A MECHANICAL LOAD AND THEN BE FREE TO RETRACT. THE ACTUATOR WILL NOT PULL A LOAD.
- SEE TD-AC-EM-10-1-J SHEET 2 FOR SUPPLEMENTAL AC-EM-10F-VOCM OPERATING RANGE DETAIL.

CAUTION! TO PREVENT LONG TERM DAMAGE TO THE ELECTRICAL COMPONENTS IT IS IMPORTANT TO NOT BLOCK (STALL) THE ACTUATOR DURING ELECTRICAL OPERATION.

- THE ACTUATOR CANNOT REVERSE A CYCLE.
- THE ACTUATOR MUST BE ALLOWED TO REACH ITS FULL EXTENDED TRAVEL TO COMPLETE A CYCLE.

CAUTION! NO STALL PROTECTION IS PROVIDED IN ACTUATOR. USE APPROPRIATE CIRCUIT PROTECTION.

3. ENVIRONMENTAL SPECIFICATIONS:
OPERATING TEMPERATURE RANGE: -20C TO 60C NON-ICING, NON-CONDENSING ENVIRONMENT
OPERATING HUMIDITY: 85% MAX.
NOT INTENDED FOR DIRECT EXPOSURE TO OUTDOOR ELEMENTS.

4. 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 5 OR 12 VDC AT 1 AMP MINIMUM PER ACTUATOR IS RECOMMENDED

CAUTION! ACTUATOR CAN BE DAMAGED IF WIRED INCORRECTLY, OR IF IMPROPER VOLTAGE IS APPLIED!
WIRE COLOR CODE / CONNECTOR PIN ASSIGNMENT: SEE CONNECTOR PINOUT LOCATION DETAILS

- PIN1: BLACK WIRE: GROUND(-)
- PIN2: RED WIRE: POWER(+)
- PIN3: ORANGE WIRE: CONTROL PULSE(+)

5. OPTIONAL CONNECTOR:
MANUFACTURER: MOLEX, SERIES: MICROFIT 3.0

- CONNECTOR RECEPTACLE, SINGLE ROW, 3 CIRCUITS, 3mm, MOLEX P/N: 43645-0300
- CONTACTS: FEMALE CRIMP TERMINAL (SOCKET) MOLEX P/N: 43030-0010

WIRE: AC-EM-10F-VOCM - WIRE: 22 AWG STYLE J-1128, 3 COLOR
WIRE LENGTH: SEE AC-EM-10F-V01M AND AC-EM-10F-V02M DIAGRAMS FOR WIRE LENGTHS
MATE FOR CONNECTOR (NOT SUPPLIED)

- MANUFACTURER: MOLEX, SERIES: MICROFIT 3.0
- CONNECTOR PLUG 3 CIRCUITS 3 mm , MOLEX P/N: 43640-0301
- RECOMMENDED CONTACTS (3 MAX REQUIRED): MOLEX, MALE CRIMP TERMINAL (PIN), MOLEX P/N: 43031-0007
- RECOMMENDED WIRE GAGE: 22 AWG

6. MOUNTING:
-TWO Ø3.28MM THROUGH HOLES ARE PROVIDED FOR THROUGH HOLE MOUNTING WITH M3 OR 4-40 BOLTS, OR FOR USE WITH M4 THREAD FORMING SCREWS FOR PLASTICS COMPATIBLE WITH A Ø3.28 MM PILOT HOLE.

- MAXIMUM ALLOWABLE INSTALL TORQUE FOR THREAD FORMING SCREWS, 226 N-cm [20 in-lbs].

7. OPTIONAL ACCESSORIES
- PAIR WITH AC-EM-059-1 R4-10 MOUNTING KIT AND APPLICABLE R4-10, SEE J-AC-EM-059-1 FOR DETAILS.

ASSEMBLY PART NUMBER
AC-EM-10F-VOCM-P

F DESIGNATES FUNCTION:
0 = ONE POSITION, NO SPRING, PUSH BACK
2 = TWO POSITION, NO SPRING, PUSH BACK

V DESIGNATES VOLTAGE:
1 = 12 VOLT
5 = 5 VOLT

C DESIGNATES CONNECTOR:
1 = MOLEX
2 = STRIPPED AND TINNED

P DESIGNATES PACKAGING:
BLANK = INDIVIDUAL
1 = BULK

M DESIGNATES SEALING LEVEL:
1 = IP55
2 = TESTED TO CLASS 1 DIV 2

12.25
2 x Ø3.28
14.5
72
32.12
17.4
RETRACTED POSITION
14 REF
EXTENDED POSITION
21 REF
SHOWN RETRACTED
SHOWN EXTENDED
PIN 3:CONTROL SIGNAL (+)
ORANGE WIRE
PIN 2:POWER (+)
RED WIRE
PIN 1:GROUND (-)
BLACK WIRE
PINOUT DETAIL B
SCALE 2:1

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

PROPRIETARY ITEM
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DESCRIPTION
ELECTRONIC ACCESS SOLUTION
ELECTRO-MECHANICAL ACTUATOR
J-AC-EM-10-1

SIZE
A2
NX
DWG NO.
J-AC-EM-10-1
DRAWN BY
DJG/KAM
DATE
16AUG2018
SCALE
1:1
SHEET
1 OF 3

AC-EM-10F-V01M, ACTUATOR WITH CONNECTOR
64
AC-EM-10F-V02M, ACTUATOR WITHOUT CONNECTOR
430

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REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
J	14JAN2020	DJG/MLL	PRN: P2020-0099

NOTES

8. THE AC-EM-10 ACTUATOR IS COMPATIBLE WITH BOTTOM ACTUATED R4-10 ROTARY LATCHES

PART NUMBERS: R4-10-1X-501-XX AND R4-10-2X-501-XX. SEE J-R4-10-10-501, J-R4-10-20-501 FOR LATCH INFORMATION.

- R4-10 LATCH AND NECESSARY MOUNTING HARDWARE SOLD SEPARATELY.
- AN OPTIONAL MOUNTING KIT INCLUDING A MOUNTING PLATE AND SCREWS IS AVAILABLE FOR USE WITH SOUTHCO R4-10 SERIES ROTARY LATCH

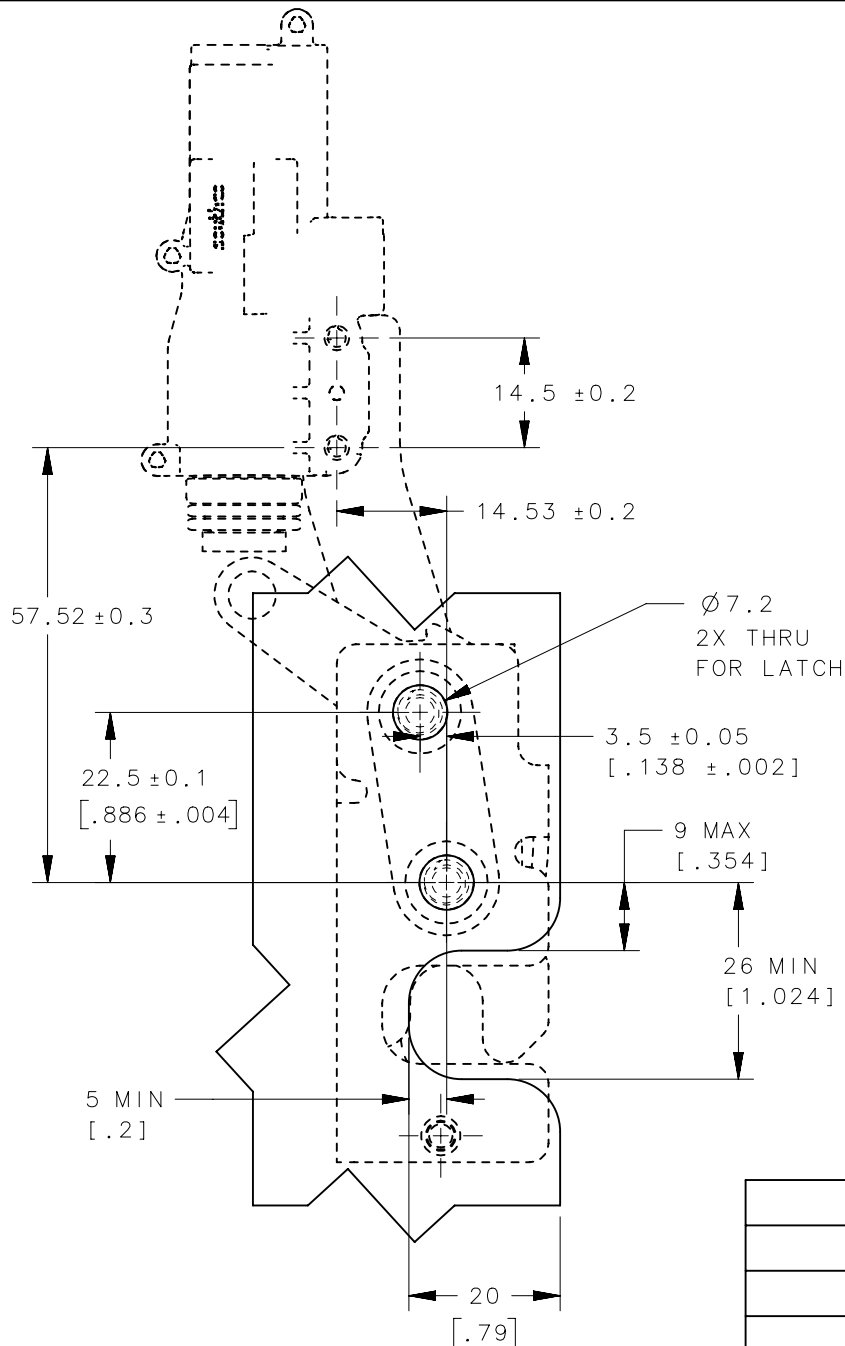
SEE J-AC-EM-059-1 FOR PART NUMBERS AND MORE INFORMATION.

-MAXIMUM ALLOWABLE TORQUE WITH ACTUATOR M4 THREAD FORMING SCREWS IS 226 N.cm [20 in.lbs]

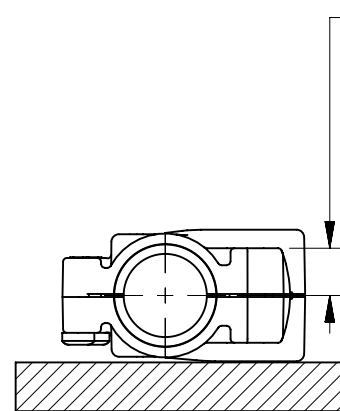
-MAXIMUM ALLOWABLE TORQUE WITH R4-10 LATCH 550 N.cm [48 in.lbs]

-CONTACT SOUTHCO FOR RECOMMENDED ACCESSORIES.

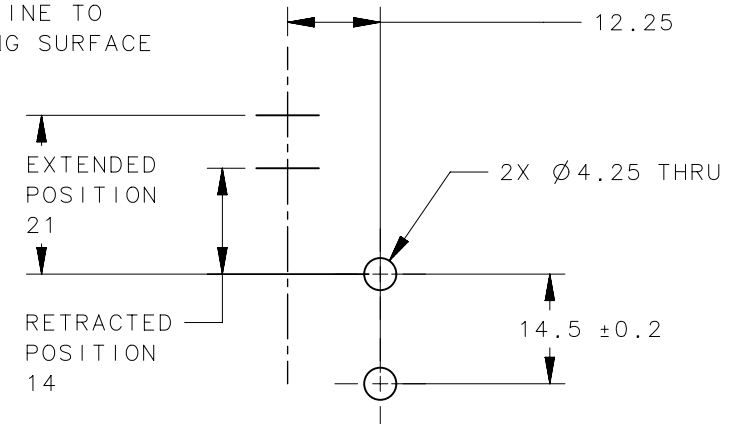
CAUTION! IT IS IMPORTANT TO NOT OBSTRUCT THE MOTION OF THE LATCH TRIGGER DURING ELECTRICAL OPERATION TO PREVENT LONG TERM DAMAGE TO THE ELECTRICAL COMPONENTS IN THE ACTUATOR.



PANEL PREPARATION
ACTUATOR WITH R4-10 ROTARY LATCH



2X 6.2
CENTERLINE TO
MOUNTING SURFACE



PANEL PREPARATION
ACTUATOR ONLY
SEE NOTE G

	THIRD ANGLE PROJECTION	 CONNECT • CREATE • INNOVATE		
	MILLIMETERS [IN]			
	TOLERANCES UNLESS OTHERWISE NOTED	DESCRIPTION		
	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	ELECTRONIC ACCESS SOLUTION ELECTRO-MECHANICAL ACTUATOR		
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.	PER ASME Y14.5M-1994	SIZE A4	SYSTEM NX	DWG NO. J-AC-EM-10-1
		DRAWN BY DJG/KAM	DATE 16AUG2018	SCALE 1:1 SHEET 2 OF 3

F

E

D

C

B

A

F

E

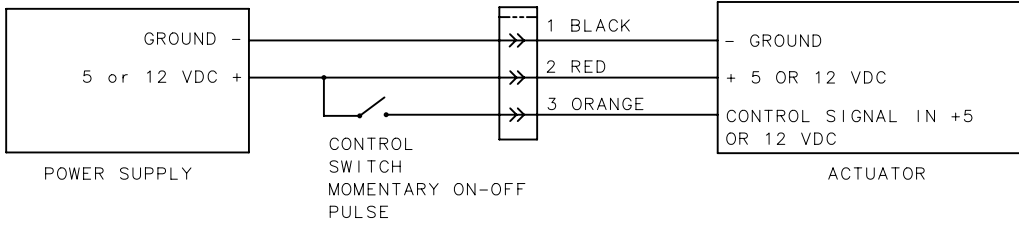
D

C

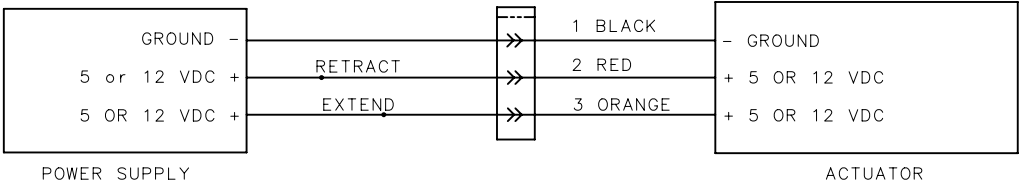
B

A

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
J	14 JAN 2020	DJG/MLL	PRN: P2020-0099



ELECTRICAL HOOKUP (ONE POSITION)



ELECTRICAL HOOKUP (TWO POSITION)

TABLE 1 - ELECTRICAL SPECIFICATIONS

PARAMETER	UNITS	ONE POSITION		TWO POSITION	
		AC-EM-100-50CM	AC-EM-100-10CM	AC-EM-102-50CM	AC-EM-102-10CM
OPERATING VOLTAGE	VDC	5 +/- 10%	9-15	5 +/- 10%	12 +/- 10%
PEAK STALL CURRENT	A	0.52 AT 5VDC	0.6 AT 12VDC	0.52 AT 5VDC	0.6 AT 12VDC
TOTAL STANDBY CURRENT - RETRACTED	A	-	-	-	-
TOTAL STANDBY CURRENT - EXTENDED	A	N/A	N/A	-	-
CONTROL SIGNAL PULSE VOLTAGE REQUIRED FOR TRIGGER COMMAND	V	5 +/- 10%	9-15	5 +/- 10%	12 +/- 10%
CONTROL SIGNAL PULSE CURRENT REQUIRED FOR TRIGGER COMMAND	A	0.52 AT 5VDC	0.6 AT 12VDC	0.52 AT 5VDC	0.6 AT 12VDC
CONTROL PULSE OR COMMAND DURATION	ms	1000	475	1600	1000
TYPICAL ACTUATOR TRANSIT TIME	ms	1350-1600	700-1000	1350-1600	700-1000

NOTE 1 - CONTROL SIGNAL PULSE DURATION REQUIRED FOR TRIGGER COMMAND IS DEPENDENT ON ACTUAL APPLICATION CONDITIONS INCLUDING VOLTAGE, LOAD, AND TEMPERATURE. USERS MUST TEST POTENTIAL PRODUCT SOLUTIONS UNDER THE ACTUAL APPLICATION CONDITIONS AND ENVIRONMENT TO DETERMINE THE SUITABILITY OF THE PRODUCT. PULSE DURATION AT THE GIVEN VOLTAGES ASSUME AMBIENT TEMPERATURES AND 44.5 N (10lbf) TENSILE FORCE (DIRECTION 1) ON R4-10-11-501-10.

CPB NUMBER 2016-0827		THIRD ANGLE PROJECTION 	 CONNECT • CREATE • INNOVATE		
		MILLIMETERS [IN]			
SURFACE AREA XXXXXmm ²		TOLERANCES UNLESS OTHERWISE NOTED UP TO 0.5 ±0.05 OVER 0.5 UP TO 6 ±0.1 OVER 6 UP TO 30 ±0.2 OVER 30 ±0.3 ANGLES ±1°	DESCRIPTION ELECTRONIC ACCESS SOLUTION		
VOLUME XXXXXmm ³					
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		PER ASME Y14.5M-1994	SIZE A2	SYSTEM NX	DWG NO. J-AC-EM-10-1
			DRAWN BY XXX/XXX	DATE DDMMYYYY	SCALE 1:1
				SHEET 3 OF 3	