

PERFORMANCE VALUES FOR AC-EM-100-50C1 ACTUATORS AND R4-10-11-501-10 ROTARY LATCH  
 ALSO SEE J-AC-EM-10-1, J-AC-EM-059-1, AND J-R4-10-11

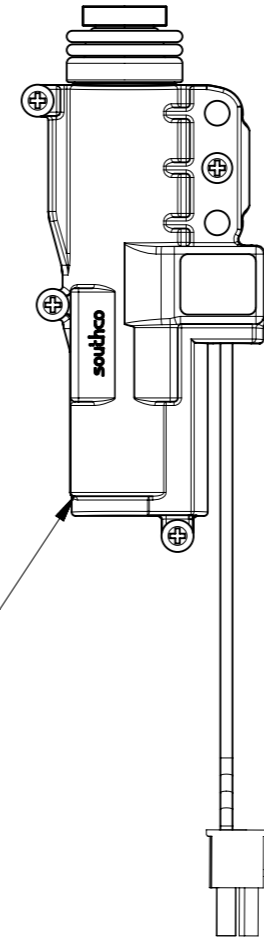
1. TESTING PERFORMED ON AC-EM-100-5021 ACTUATOR.  
 SOME TESTS PERFORMED WITH OPTIONAL R4-10-11-501-10 ROTARY LATCH AND AC-EM-059-1 MOUNTING KIT.
2. TENSILE FORCES (DIRECTION 1) ARE APPLIED AT THE NOMINAL LATERAL POSITION OF THE LATCH (ZERO MISALIGNMENT).
3. CYCLE LIFE OF AC-EM-100-5021 ACTUATOR IS 50,000 CYCLES WHEN USED WITH R4-10-11-501-10 ROTARY LATCH.  
 - SEE TABLE 1 FOR CYCLE PROFILE  
 - SEE TD-R4-10-J FOR R4-10 LATCH CYCLE DATA
4. MAXIMUM TENSILE FORCE (DIRECTION 1) ON THE CAM THAT THE R4-10 LATCH CAN RELEASE (OPEN) ELECTRICALLY ONE TIME:  
 - 89.0 N (20.0 lbf) AT 4.25 VDC  
 - 155.7 N (35.0 lbf) AT 5.00 VDC  
 - 200.2 N (45.0 lbf) AT 5.75 VDC
5. AVERAGE ULTIMATE TENSILE LOAD (DIRECTION 1) ON THE CAM BEFORE LATCH CAM FAILURE: SEE TD-R4-10-J FOR LATCH STRENGTH DATA
6. MAXIMUM CONSTANT LOAD THE ACTUATOR CAN PUSH, WITH 7.5MM TRAVEL, IN DIRECTION 2 WHEN OPERATED ELECTRICALLY ONE TIME (WITHOUT R4-10 LATCH):  
 - 24.5 N (5.5 lbf) AT 4.25 VDC  
 - 35.6 N (8.0 lbf) AT 5.00 VDC  
 - 44.5 N (10.0 lbf) AT 5.75 VDC
7. OPERATING TEMPERATURE -20 TO 60 C

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
K	29MAR2024	SAK/DMS	PRN: P2024-0561

NUMBER OF CYCLES	LOAD	VOLTAGE (VDC)	TEMPERATURE (DEG C)
40,000	44.5 N (10 lbf) PULL FORCE (DIRECTION 1) ON LATCH	5	25
5,000		5	-20
5,000		5	60

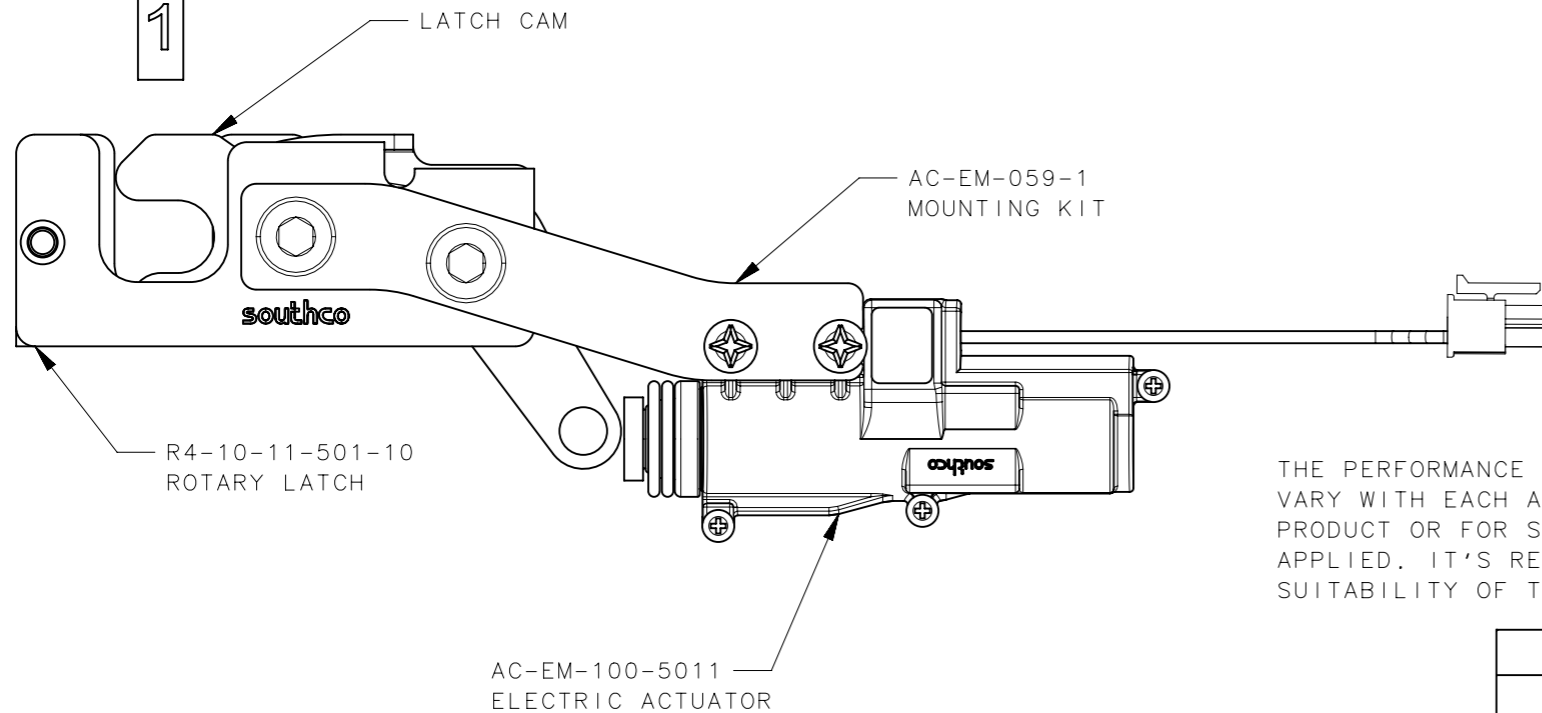
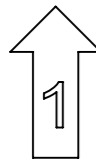
TABLE 1 - CYCLE LIFE PROFILE

DIRECTION 2  
 ACTUATOR PUSH FORCE  
 SEE NOTE 6



AC-EM-100-5011  
 ELECTRIC ACTUATOR

DIRECTION 1  
 TENSILE FORCES  
 APPLIED TO CAM  
 SEE NOTES 3, 4, 5



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.

REF: trAC-33757  
 trAC-34107

THIRD ANGLE PROJECTION	<b>southco</b> CONNECT · CREATE · INNOVATE		
TOLERANCES UNLESS OTHERWISE NOTED	DESCRIPTION ACTUATOR		
ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	SIZE A3	SYSTEM NX	DWG NO. TD-AC-EM-10-1
PROPRIETARY ITEM <small>EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.</small>	PER ASME Y14.5M-2009	DRAWN BY DJG/KAM	DATE 11JUL2018
		SCALE 1:1	SHEET 1 OF 4

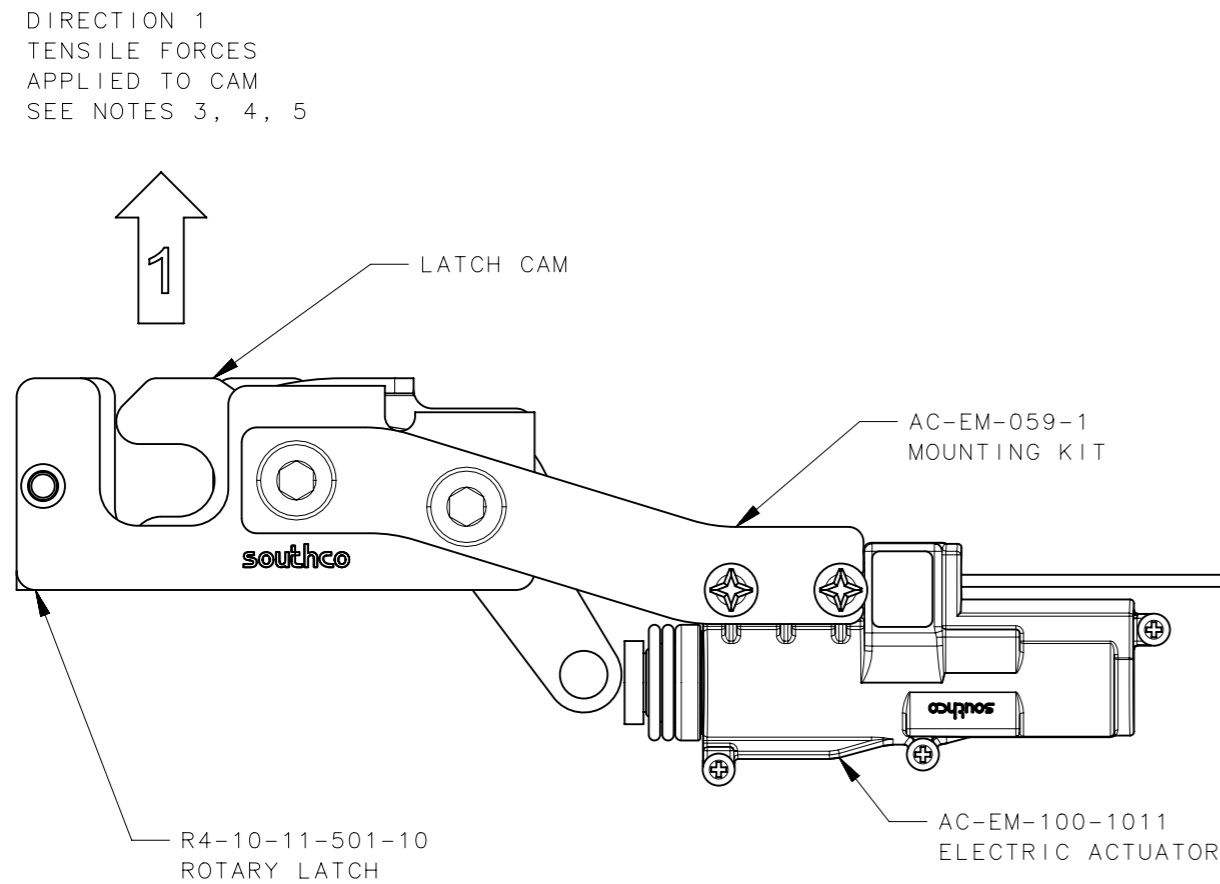
PERFORMANCE VALUES FOR AC-EM-100-10CS ACTUATORS AND R4-10-11-501-10 ROTARY LATCH  
 ALSO SEE J-AC-EM-10-1, J-AC-EM-059-1, AND J-R4-10-11

- TESTING PERFORMED ON AC-EM-100-1021 ACTUATOR.  
 SOME TESTS PERFORMED WITH OPTIONAL R4-10-11-501-10 ROTARY LATCH AND AC-EM-059-1 MOUNTING KIT.
- TENSILE FORCES (DIRECTION 1) ARE APPLIED AT THE NOMINAL LATERAL POSITION OF THE LATCH (ZERO MISALIGNMENT).
- CYCLE LIFE OF AC-EM-100-1021 ACTUATOR IS 50,000 CYCLES WHEN USED WITH R4-10-11-501-10 ROTARY LATCH.
  - SEE TABLE 2 FOR CYCLE PROFILE
  - SEE TD-R4-10-J FOR R4-10 LATCH CYCLE DATA
- MAXIMUM TENSILE FORCE (DIRECTION 1) ON THE CAM THAT THE R4-10 LATCH CAN RELEASE (OPEN) ELECTRICALLY ONE TIME:
  - 133 N (30 lbf) AT 9 VDC
  - 222 N (50 lbf) AT 12 VDC
  - 311 N (70 lbf) AT 15 VDC
- AVERAGE ULTIMATE TENSILE LOAD (DIRECTION 1) ON THE CAM BEFORE LATCH CAM FAILURE: SEE TD-R4-10-J FOR LATCH STRENGTH DATA
- MAXIMUM CONSTANT LOAD THE ACTUATOR CAN PUSH, WITH 7.5MM TRAVEL, IN DIRECTION 2 WHEN OPERATED ELECTRICALLY ONE TIME (WITHOUT R4-10 LATCH):
  - 40 N (9.0 lbf) AT 9 VDC
  - 53 N (12.0 lbf) AT 12 VDC
  - 65 N (14.5 lbf) AT 15 VDC
- OPERATING TEMPERATURE -20 TO 60 C

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
K	29MAR2024	SAK/DMS	PRN: P2024-0561

NUMBER OF CYCLES	LOAD	VOLTAGE (VDC)	TEMPERATURE (DEG C)
40,000	44.5 N (10 lbf) TENSILE FORCE (DIRECTION 1) ON LATCH CAM	12	25
5,000		9	25
5,000		15	25
5,000	NONE	9	-20
5,000	NONE	15	-20
5,000	NONE	9	60
5,000	NONE	15	60

TABLE 2 - CYCLE LIFE PROFILE



DIRECTION 2  
 ACTUATOR PUSH FORCE  
 SEE NOTE 6



DIRECTION 1  
 TENSILE FORCES  
 APPLIED TO CAM  
 SEE NOTES 3, 4, 5



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REF: trAC-37480

THIRD ANGLE PROJECTION						
MILLIMETERS [IN]	DESCRIPTION			ACTUATOR		
TOLERANCES UNLESS OTHERWISE NOTED	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.			SIZE	SYSTEM	DWG NO.
PER ASME Y14.5M-2009	A3	NX	TD-AC-EM-10-1	DRAWN BY	DATE	SCALE
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.	DJG/KAM	11JUL2018	1:2	SHEET	2 OF 4	

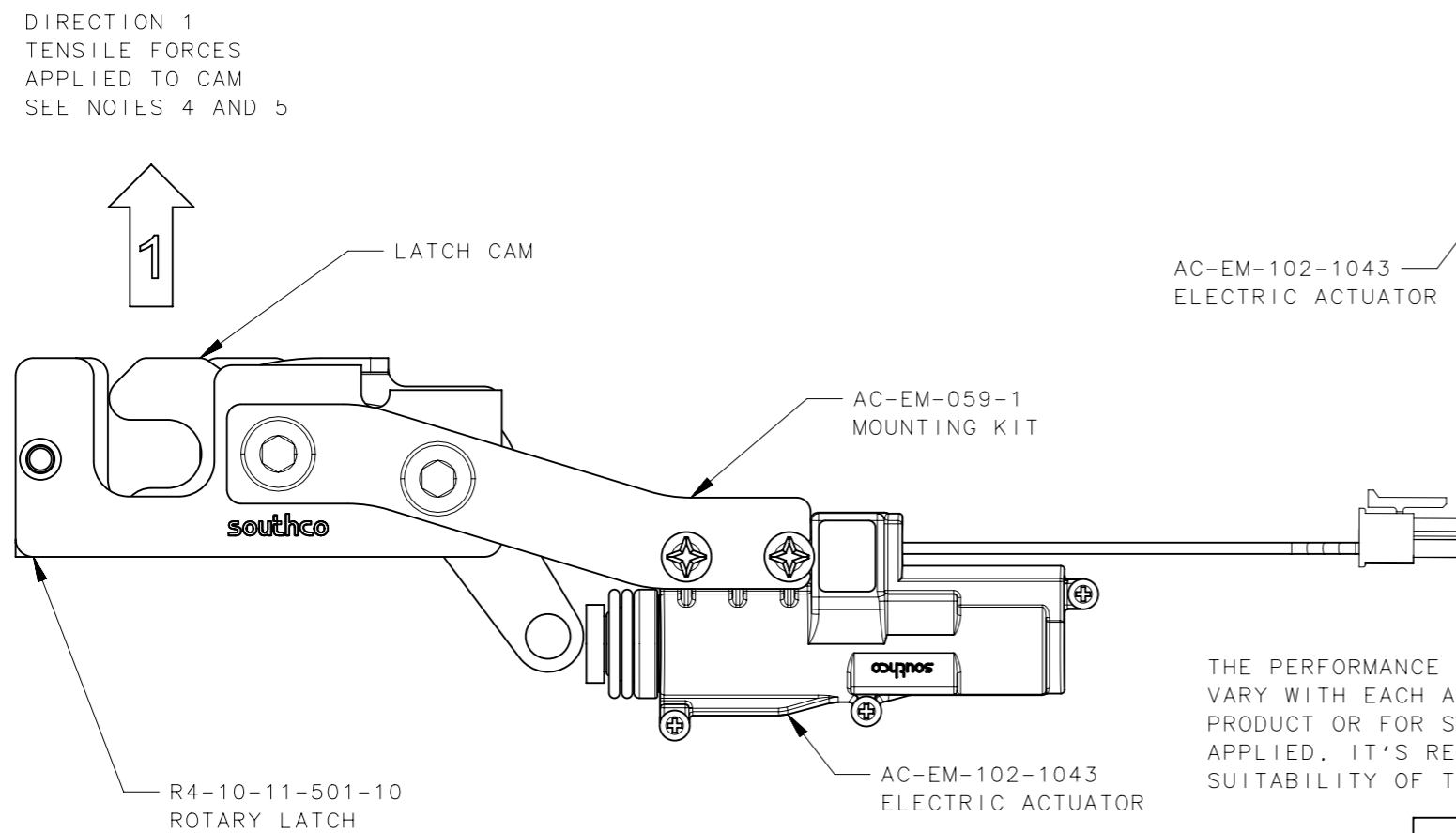
PERFORMANCE VALUES FOR AC-EM-102-10CS ACTUATORS AND R4-10-11-501-10 ROTARY LATCH  
 ALSO SEE J-AC-EM-10-1, J-AC-EM-059-1, AND J-R4-10-11

1. TESTING PERFORMED ON AC-EM-102-1043 ACTUATOR.  
 SOME TESTS PERFORMED WITH OPTIONAL R4-10-11-501-10 ROTARY LATCH AND AC-EM-059-1 MOUNTING KIT.
2. TENSILE FORCES (DIRECTION 1) ARE APPLIED AT THE NOMINAL LATERAL POSITION OF THE LATCH (ZERO MISALIGNMENT).
3. CYCLE LIFE OF AC-EM-102-1043 ACTUATOR IS 50,000 CYCLES WHEN USED WITH 2 LB LOAD.  
 - SEE TABLE 3 FOR CYCLE PROFILE
4. MAXIMUM TENSILE FORCE (DIRECTION 1) ON THE CAM THAT THE R4-10 LATCH CAN RELEASE (OPEN) ELECTRICALLY ONE TIME:
  - 275 N (62 lbf) AT 10.8 VDC
  - 315 N (71 lbf) AT 12.0 VDC
  - 342 N (77 lbf) AT 13.2 VDC
5. AVERAGE ULTIMATE TENSILE LOAD (DIRECTION 1) ON THE CAM BEFORE LATCH CAM FAILURE: SEE TD-R4-10-J FOR LATCH STRENGTH DATA
6. MAXIMUM CONSTANT LOAD THE ACTUATOR CAN PUSH, WITH 7.5MM TRAVEL, IN DIRECTION 2 WHEN OPERATED ELECTRICALLY ONE TIME (WITHOUT R4-10 LATCH):
  - 42.0 N (9.5 lbf) AT 10.8 VDC
  - 46.5 N (10.5 lbf) AT 12.0 VDC
  - 51.0 N (11.5 lbf) AT 13.2 VDC
7. OPERATING TEMPERATURE -40 TO 60 C

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
K	29MAR2024	SAK/DMS	PRN: P2024-0561

NUMBER OF CYCLES	LOAD	VOLTAGE (VDC)	TEMPERATURE (DEG C)
40,000	8.9 N (2 lbf) PUSH FORCE (DIRECTION 2) ON ACTUATOR	12	25
5,000		12	-40
5,000		12	60

TABLE 3 - CYCLE LIFE PROFILE



DIRECTION 2  
 ACTUATOR PUSH FORCE  
 SEE NOTE 6

DIRECTION 1  
 TENSILE FORCES  
 APPLIED TO CAM  
 SEE NOTES 4 AND 5

SOUTHCO PERFORMANCE GUIDELINES

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REF: trAC-43471

THIRD ANGLE PROJECTION						
MILLIMETERS [IN]	DESCRIPTION					
TOLERANCES UNLESS OTHERWISE NOTED	ACTUATOR					
ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	SIZE	SYSTEM	DWG NO.	DATE		
PROPRIETARY ITEM	A3	NX	TD-AC-EM-10-1	11JUL2018		
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		DJG/KAM	11JUL2018	1:2	3 OF 4	

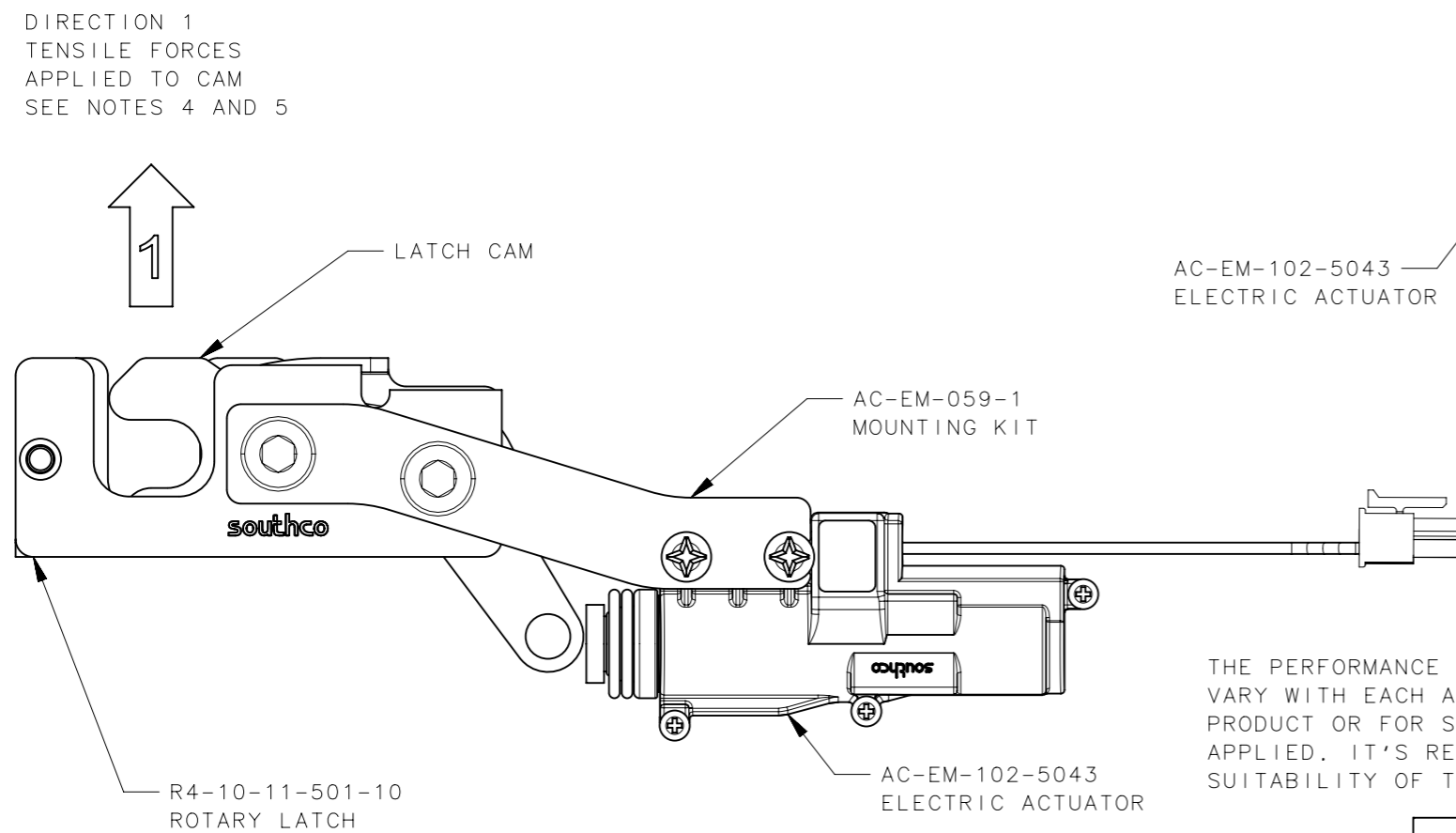
PERFORMANCE VALUES FOR AC-EM-102-50CS ACTUATORS AND R4-10-11-501-10 ROTARY LATCH  
 ALSO SEE J-AC-EM-10-1, J-AC-EM-059-1, AND J-R4-10-11

- TESTING PERFORMED ON AC-EM-102-5043 ACTUATOR.  
 SOME TESTS PERFORMED WITH OPTIONAL R4-10-11-501-10 ROTARY LATCH AND AC-EM-059-1 MOUNTING KIT.
- TENSILE FORCES (DIRECTION 1) ARE APPLIED AT THE NOMINAL LATERAL POSITION OF THE LATCH (ZERO MISALIGNMENT).
- CYCLE LIFE OF AC-EM-102-5043 ACTUATOR IS 50,000 CYCLES WHEN USED WITH 2 LB LOAD.  
 - SEE TABLE 4 FOR CYCLE PROFILE
- MAXIMUM TENSILE FORCE (DIRECTION 1) ON THE CAM THAT THE R4-10 LATCH CAN RELEASE (OPEN) ELECTRICALLY ONE TIME:
  - 310 N (70 lbf) AT 4.5 VDC
  - 355 N (80 lbf) AT 5.0 VDC
  - 400 N (90 lbf) AT 5.5 VDC
- AVERAGE ULTIMATE TENSILE LOAD (DIRECTION 1) ON THE CAM BEFORE LATCH CAM FAILURE: SEE TD-R4-10-J FOR LATCH STRENGTH DATA
- MAXIMUM CONSTANT LOAD THE ACTUATOR CAN PUSH, WITH 7.5MM TRAVEL, IN DIRECTION 2 WHEN OPERATED ELECTRICALLY ONE TIME (WITHOUT R4-10 LATCH):
  - 35.0 N (8.0 lbf) AT 4.5 VDC
  - 42.0 N (9.5 lbf) AT 5.0 VDC
  - 48.0 N (11.0 lbf) AT 5.5 VDC
- OPERATING TEMPERATURE -40 TO 60 C

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
K	29MAR2024	SAK/DMS	PRN: P2024-0561

NUMBER OF CYCLES	LOAD	VOLTAGE (VDC)	TEMPERATURE (DEG C)
40,000	8.9 N (2 lbf) PUSH FORCE (DIRECTION 2) ON ACTUATOR	5	25
5,000		5	-40
5,000		5	60

TABLE 4 - CYCLE LIFE PROFILE



DIRECTION 2  
 ACTUATOR PUSH FORCE  
 SEE NOTE 6

DIRECTION 1  
 TENSILE FORCES  
 APPLIED TO CAM  
 SEE NOTES 4 AND 5

SOUTHCO PERFORMANCE GUIDELINES

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REF: trAC-46943

THIRD ANGLE PROJECTION						
MILLIMETERS [IN]						
TOLERANCES UNLESS OTHERWISE NOTED	DESCRIPTION ACTUATOR					
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