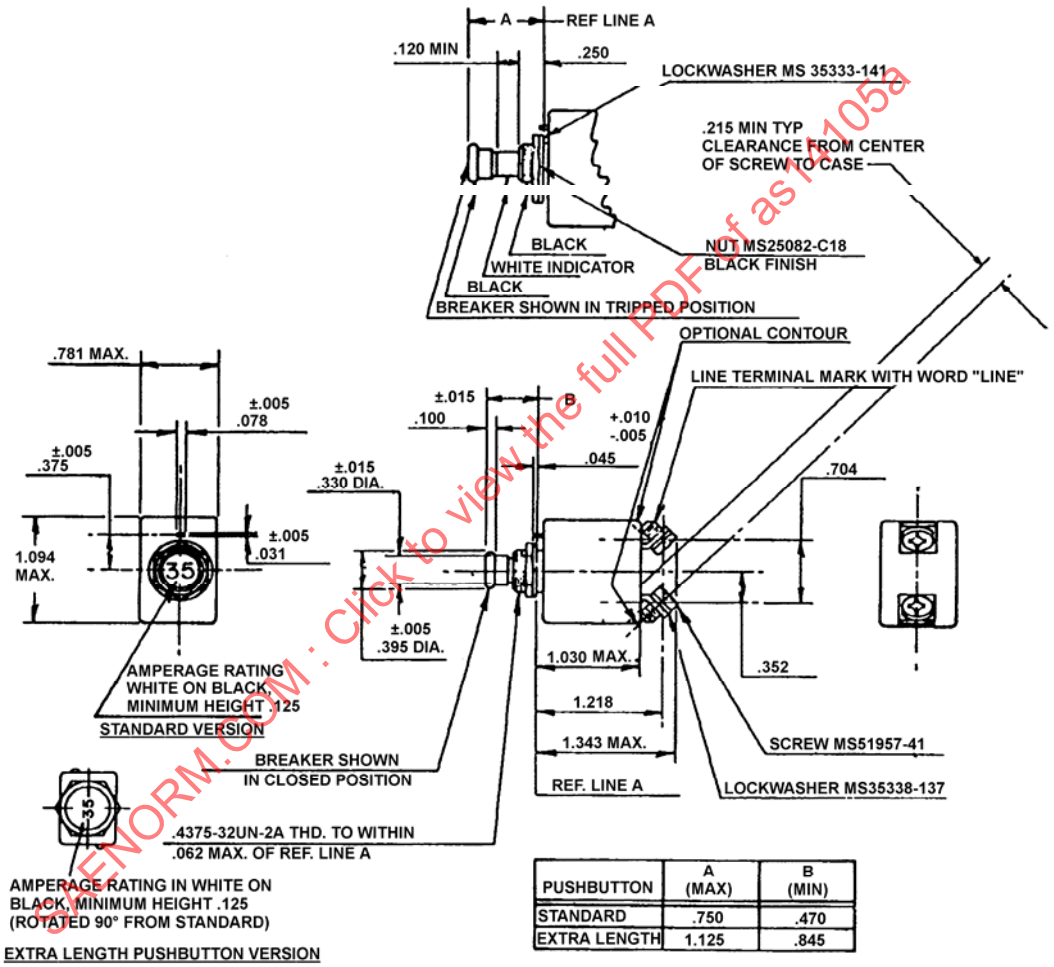
FEDERAL SUPPLY CLASS
5925

RATIONALE

CORRECT ERRORS AND UPDATE SPECIFICATIONS PRIOR TO AND FROM THE ORIGINAL CONVERSION FROM NAVAIR CONTROL TO SAE CONTROL AND INCLUDE ADDITIONAL CHANGES REQUESTED BY NAVAIR TO REFLECT REQUIREMENTS THAT ARE BEING USED IN THE MILITARY.

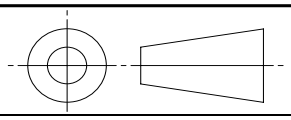
THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODISS SPECIFIED IN THE SOLICIATION: SAE AS58091.



PUSHBUTTON	A (MAX)	B (MIN)
STANDARD	.750	.470
EXTRA LENGTH	1.125	.845

FIGURE 1

THIRD ANGLE PROJECTION



ISSUED 1997-08 REVISED 2007-01

CUSTODIAN: SAE AE-8/AE-8B1

PROCUREMENT SPECIFICATION: AS58091

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

(R) CIRCUIT BREAKER - AIRCRAFT, TRIP-FREE, PUSH PULL, 25 THRU 35 AMPS, TYPE I
-55 TO +121 °C

TABLE 1

ELECTRICAL AND MECHANICAL CHARACTERISTICS										
DASH #	NOMINAL AMPERAGE RATING (A)	VOLTAGE DROP MAX. (V)	WEIGHT MAX. (LB)	OPERATING FORCE MAX. (LB)		ENDURANCE CYCLES				MECH NO LOAD
						RESISTIVE		INDUCTIVE		
				PULLOUT	RESET	AC	DC	AC	DC	
25	25	.250	.082	5	5	5,000 1/	5,000 2/	2,500 1/	NA	10,000
30	30									
35	35									

1/ 115/200 400 HZ VOLT SYSTEM TESTED AT 120 ± 5 VOLTS 380 TO 420 HZ
2/ 28 VOLT DC SYSTEM, TESTED AT 30 ± 2 VOLTS

TABLE 2

DETAIL CALIBRATION REQUIREMENTS 3/									
NOMINAL AMPERAGE RATING (A)	OVERLOAD TRIP TIME IN SECS AT PERCENT RATED CURRENT			AMBIENT EFFECT ON CALIBRATION AT PERCENT RATED CURRENT					
	-55 to +121 °C			+25 °C		+121 °C		-55 °C	
	200%	500%	1000%	115%	138%	85%	138%	115%	165%
25	2 to 35	0.25 to 3.0	0.06 to 0.7	MUST HOLD - 1 HOUR MIN.	MUST TRIP - 1 HOUR MAX.	MUST HOLD - 1 HOUR MIN.	MUST TRIP - 1 HOUR MAX.	MUST HOLD - 1 HOUR MIN.	MUST TRIP - 1 HOUR MAX.
30									
35									

3/ SEE TABLE 6 FOR ADDITIONAL CALIBRATION PERFORMANCE REQUIREMENTS.

TABLE 3

INTERRUPTING CURRENT (AMPERES) REQUIREMENTS 4/						
NOMINAL AMPERAGE RATING (A)	TEST DESIGNATION PER AS58091					
	A	B	C	D	E	F
25	2,000	2,000	6,000	6,000	(a) 1,500 (b) 750	(a) 3,000 (b) 1,000
30						
35						

4/ SEE TABLE 5 FOR ADDITIONAL INTERRUPTING REQUIREMENTS.

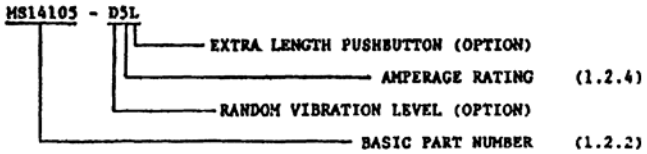
TABLE 4

ENVIRONMENTAL PERFORMANCE	
MAX OPERATING ALTITUDE	70,000 FEET
OPERATING AMBIENT TEMP RANGE	-55 TO +121 °C
VIBRATION - IN ACCORDANCE WITH AS58091	SINE – REQUIRED RANDOM - (OPTIONAL)
SHOCK	50 G, MIL-STD-202, METHOD 213, TEST CONDITION A
ACCELERATION	10 G

REQUIREMENTS:

1. HIGH TEMPERATURE VIBRATION TESTS SHALL BE CONDUCTED AT +121 °C RATHER THAN +71 °C.

2. THE PART NUMBERS FOR CIRCUIT BREAKERS IN ACCORDANCE WITH THIS SPECIFICATION SHALL CONFORM TO THE EXAMPLE:



WHEN A DESIGNATOR IS NOT APPLICABLE IT SHALL BE OMITTED FROM THE PART NUMBER.

3. ALL QUALIFICATION INSPECTION TESTS REQUIRED BY AS58091 SHALL BE PERFORMED EXCEPT FOR THE FOLLOWING CHANGES:

   a. TEST GROUP I - OVERLOAD CALIBRATION SHALL BE PERFORMED AT 200% OF RATED CURRENT ONLY.

   b. TEST GROUPS II AND III - DO NOT PERFORM THE VOLTAGE DROP TEST.

   c. TEST GROUP IV AND X - PERFORM THE AMBIENT EFFECT ON CALIBRATION TEST ONLY AT +121 °C.

   d. ADD TEST GROUP XXIV - 2 SAMPLES. INTERRUPTING CAPACITY - LINE TO LINE (AC). THESE SAMPLES SHALL BE SUBJECTED TO THE INTERRUPTING CAPACITY TEST AS FOLLOWS IN TABLE 5:

TABLE 5

TEST NO.	SYSTEM	VOLTAGE BEFORE FAULT	CALIBRATED FAULT CURRENT-AMPERES	TRANSIENT VOLTAGE AFTER CALIBRATED FAULT CURRENT INTERRUPTION (V)	OPEN CIRCUIT VOLTAGE
A	400 Hertz 115/200 V	200 V ± 8 V	1200 IN 10 TO 25 CYCLES AFTER FAULT INITIATION THROUGH TWO CIRCUIT BREAKERS IN SERIES POWER FACTOR .4 TO .5 LAGGING	208 WITHIN 3 CYCLES 260 WITHIN 6 CYCLES 286 MAXIMUM	200 V ± 8 V

   e. ADD TEST GROUP XXV - 5 SAMPLES OF EACH RATING. EACH OF THESE 5 SAMPLES SHALL BE SUBJECTED TO THE TESTS IN THE FOLLOWING TABLE AND SHALL MEET THE REQUIRED LIMITS SHOWN. THESE 5 SAMPLES SHALL NOT BE SUBJECTED TO TEST GROUP I.

TABLE 6 - TEST CONDITIONS

TEST		AMBIENT TEMP °C (±2 °C)	ALTITUDE (FEET)	CIRCUIT BREAKER PRELOAD % OF RATING	REQUIRED LIMITS
EXAMINATION OF PRODUCT		+25	0	0	
DIELECTRIC STRENGTH		+25	0	0	1500 VOLTS
		- 55	0	0	1500 VOLTS
		+121	70,000	0	500 VOLTS
INSULATION RESISTANCE		+25	0	0	100 MEGOHMS
		- 55	0	0	100 MEGOHMS
		+121	70,000	0	100 MEGOHMS
VOLTAGE DROP		+25	0	0	SEE TABLE 1
		- 55	0	0	SEE TABLE 1
		+121	70,000	0	SEE TABLE 1
CONTACT RESISTANCE		+25	0	0	SEE TABLE 1
MINIMUM LIMIT OF ULTIMATE TRIP (TESTING TIME 1 HOUR)		+25	0	0	115% RATED CURRENT
		- 55	0	0	115% RATED CURRENT
		+121	70,000	0	65% RATED CURRENT
MAXIMUM LIMIT OF ULTIMATE TRIP		+25	0	0	138% RATED CURRENT
		- 55	0	0	165% RATED CURRENT
		+121	70,000	0	138% RATED CURRENT
OVERLOAD CALIBRATION	200%	+25	0	0	4 TO 20 SECONDS
		- 55	0	0	6 TO 35 SECONDS
		+121	70,000	0	2 TO 15 SECONDS
		+121	70,000	60	1.0 TO 10 SECONDS
	500%	+25	0	0	.4 TO 1.7 SECONDS
		- 55	0	0	.55 TO 3.0 SECONDS
		+121	70,000	0	.25 TO 1.0 SECONDS
		+121	70,000	60	.12 TO .7 SECONDS
	1000%	+25	0	0	.10 TO .40 SECONDS
		- 55	0	0	.15 TO .7 SECONDS
		+121	70,000	0	.06 TO .25 SECONDS
		+121	70,000	60	.030 TO .18 SECONDS
NON-TRIPPING OVERLOADS	200%	+121	70,000	0	NO TRIP
		+121	70,000	60	NO TRIP
	500%	+121	70,000	0	NO TRIP
		+121	70,000	60	NO TRIP
	1000%	+121	70,000	0	NO TRIP
		+121	70,000	60	NO TRIP