

REVISIONS

REV.	DESCRIPTION	DATE	INIT
0	INITIAL RELEASE	10/30/14	MJS
1	UPDATED CUSTOMER PART NUMBER, ECO 494	01/18/16	PJC
2	ADDED DIMENSIONS .18 AND .09, ECO 518	02/12/16	NMP

SWITCH IS MERCURY MARINE CONFIDENTIAL

INTERPRET THIS DRAWING IN ACCORDANCE WITH ASME Y 14.5-2009

MATERIAL SPECIFICATION AND NOTES

1. SWITCH HOUSING IS UV STABLE ACETAL COPOLYMER WITH 12% GLASS FIBER, COLOR: BLACK.
2. SWITCH PLUNGER MATERIAL IS ACETAL COPOLYMER WITH 0% GLASS FIBER, COLOR: LIGHT GRAY.
3. SWITCH IS DATE CODED ON ONE SIDE OF HOUSING PER DELTA DATE CODE SPECIFICATION #1640. SWITCH IS ALSO IDENTIFIED WITH MERCURY MARINE P/N:8M6004089.
4. PLUNGER SEALING O-RING LUBRICANT IS NYE UNIFLOR #8132.
5. TERMINAL WIPER INTERFACE IS IN FREE AIR IN THE NORMALLY OPEN CONDITION.
6. WIRE TO BE 16 GA. (37/32) 80°C, PVC INSULATION. CABLE LAY-UP MAY CONSIST OF MORE STRANDS OF FINER WIRE PROVIDED TOTAL CROSS SECTIONAL AREA IS NO LARGER.
7. LEAD WIRES CONFORM TO SAE J1128 AND SAE J378.
8. SWITCH MAY BE USED TO SATISFY THE U.S. CODE OF FEDERAL REGULATION TITLE 33, PART 183.701 SUBPART L "START IN GEAR PROTECTION".

ELECTRICAL CONTACT DATA

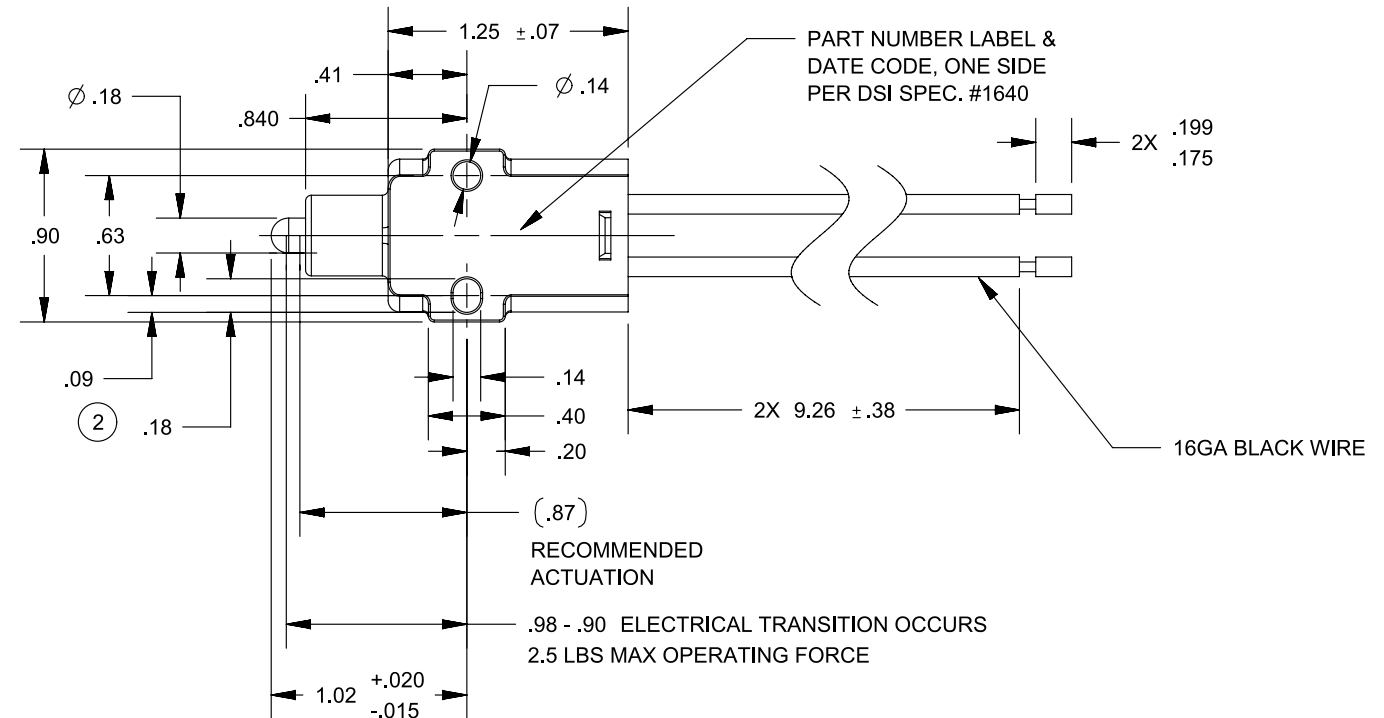
9. ELECTRICAL CONTACTS ARE SILVER ALLOY PLATED.
10. TYPICAL LOAD 1mA RESISTIVE @ 5 VOLTS, MAXIMUM LOAD 250mA RESISTIVE.

DURABILITY REQUIREMENT

11. 200,000 ACTUATIONS WITH NO OPENS OR SHORTS MEASURING GREATER THAN 1.25 VOLTS (FROM OPEN OR SHORT VOLTAGE LEVEL) FOR MORE THAN 20 MILLISECONDS WITH 5 VDC ±0.5 REGULATED POWER SUPPLY, 7.5 VDC MAX. ACTUATIONS MADE VIA A CAM AT A MAXIMUM OF A 45° ANGLE RELATIVE TO PLUNGER LINE OF DEPRESSION.
12. SWITCHING RATE SHALL BE ONE ACTUATION CYCLE MAX. PER ONE SECOND WITH A SWITCH OFF TIME OF THREE SECONDS.
13. NO INGRESS OF EXTERNAL COMTAMINANTS ALLOWED.
14. SWITCH AND SEALED LEADS WITHSTAND 10" HG VACUUM WHEN SUBMERGED IN WATER PER DSI "SALT WATER TEST" BEFORE AND AFTER CYCLE TESTING.
15. SWITCHES SHALL BE DISECTED TO VERIFY PLASTIC HAS NOT BEEN DISPLACED FROM THE PLUNGER ONTO THE CONTACTS.
16. A YEARLY AUDIT SHALL CONFIRM THAT THE COMPONENT COMPLIES WITH THE DURABILITY REQUIREMENTS ABOVE.

OPERATING ENVIRONMENT - USAGE INFORMATION. NO TESTING REQUIRED

17. STORAGE TEMPERATURE: -30°C TO 85°C
18. OPERATING TEMPERATURE -8°C TO 85°C
19. EXPOSURE TO FRESH AND SALT WATER.
20. DTS SHIFT ACTUATOR ACTUATES THE SWITCH FROM NEUTRAL TO FORWARD/REVERSE AND FORWARD/REVERSE TO NEUTRAL WITHIN 25 MILLISECONDS.
21. ELECTRICAL SWITCHING FROM OPEN TO CLOSED FROM CLOSED TO OPEN MUST OCCUR WITHIN 1 SECOND AFTER THE PLUNGER IS DEPRESSED/RELEASED WITH THE SWITCH SUBMERGED IN M/M SHIFT CAM LUBRICANT (CHEMTOOL INC. ILF 6.3) AND ACTUATED AT 60 HZ. THE INTENT OF THIS TEST IS TO DETERMINE IF THE SWITCH CAN HYDRAULICALLY LOCK.



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		CHECKED bkirkman	DATE 16-Dec-2014				
		APPROVED ikirbawy	DATE 15-Jun-2015				
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				SCALE NTS	SHEET 1 OF 1	PROJECT NO. EX0257	REVISION 2