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| REVISIONS | | | |
|---|---|---|---|
| LTR | ECN NUMBER | DATE | APPROVED |
| A | ECN-13249 | 9-21-01 | GW |

1. SCOPE

1.1 **Scope.** This specification covers the detail requirements for a precision potentiometer, Robertshaw Controls Company, New England Instrument Division (hereinafter called NEI) type number 116FL1-431 equivalent to Electronics & Space Corp. 881048-1 Rev A.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on the date of issue of the applicable NEI sales order forms part of this specification to the extent specified herein:

SPECIFICATIONS

| NEI | MILITARY |
|---|---|
| 1228-0000 | MIL-R-39023 |
| 2-1540 | MIL-R-39023/2 |

3. REQUIREMENTS

3.1 **General specifications.** The potentiometers shall be as specified in NEI specification 1228-0000 except as modified or elaborated on herein. In the event of any conflict between this specification and the general specification, this specification shall govern.

| | | | |
|---|---|---|---|
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES<br>TOLERANCES<br>FRACTIONS ± 1/64<br>DECIMALS ± .005<br>ANGLES ± 2° | DRAWN M.A.COTE DATE 11-14-96 | Robertshaw CONTROLS COMPANY | NEI DIVISION<br>NATICK, MA 01760 |
| | CHECKED DATE 1/13/97 | PRODUCT DEFINITION SPECIFICATION<br>PRECISION POTENTIOMETER<br>TYPE NO. 116FL1-431 | |
| MFG APPROVED DATE | APPROVED DATE 1/13/97 | | |
| Q C APPROVED DATE | APPROVED FOR NEI DATE | SIZE: A | CODE IDENT NO: 08815 |
| SALES APPROVED DATE | APPROVED FOR DATE | DRAWING NUMBER: 1228-0431-00 | |
| | | SCALE: | SHEET 1 OF 6 |

Form 1009

## 3.2 GENERAL CHARACTERISTICS

| | CHARACTERISTICS | REQUIREMENT | QA CLASS Requirement Source | QA CLASS | AQL |
|---|---|---|---|---|---|
| 1. | NO. OF CUPS | 1 | O | A | |
| 2. | NO. OF SECTIONS | 1 | O | A | |
| 3. | ELEMENT TYPE | Conductive Plastic "Resistofilm" | N/O | Q | |
| 4. | BEARING TYPE | Ball | N | Q | |
| 5. | MATERIAL - MOUNTING PLATE | Anodized Aluminum | N | Q | |
| 6. | MATERIAL-HOUSING | Anodized Aluminum | N | Q | |
| 7. | MATERIAL-SHAFT | Stainless Steel | O | Q | |
| 8. | WEIGHT | 1.0 oz max | O | Q | |

## 3.3 MECHANICAL PARAMETERS

| | PARAMETER | REQUIREMENT | QA CLASS Requirement Source | QA CLASS | AQL |
|---|---|---|---|---|---|
| 1. | LATERAL RUNOUT | 0.001 TIR max | O | A | |
| 2. | PILOT SURFACE RUNOUT | 0.001 TIR max | O | A | |
| 3. | SHAFT RUNOUT | 0.001 TIR max | O | A | |
| 4. | END PLAY | 0.005 TIR max | O | A | |
| 5. | RADIAL PLAY | 0.001 TIR max | O | A | |
| 6. | STARTING TORQUE | 0.5 oz-in max | O | A | |
| 7. | RUNNING TORQUE | 0.4 oz-in max | O | A | |
| 8. | MOMENT OF INERTIA | N/R | - | - | |
| 9. | STATIC STOP STRENGTH | N/A | - | - | |
| 10. | DYNAMIC STOP STRENGTH | N/A | - | - | |
| 11. | MECHANICAL TRAVEL | 360 deg. Continuous | O | A | |

LEGEND:
Requirement Source — N = NEI; O = OEM
Q.A. Class — A = Acceptance Test;
P = Preproduction Test; Q = Qualification Test

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## 3.4 ELECTRICAL AND ELECTROMECHANICAL PARAMETERS

| | PARAMETER | REQUIREMENT | Requirement Source | QA CLASS | AQL |
|---|---|---|---|---|---|
| 1. | DIELECTRIC WITH-STANDING VOLTAGE | 750 Volts @ 60 HZ | O | A | |
| 2. | INSULATION RESISTANCE | 1000 Megohms @ 500 VDC | O | A | |
| 3. | RESISTANCE - TEMPERATURE CHARACTERISTIC | MIL-R-39023 symbol A | O | Q | |
| 4. | POWER RATING | 1.25 Watts @ 70 deg. C derated linearity to 0 watts @ 125 deg. C | O | Q | |
| 5. | EXCITATION FREQ. FOR AC CHARACTERISTICS | N/R | - | - | |
| 6. | QUADRATURE VOLTAGE | N/A | - | - | |
| 7. | PHASE SHIFT | N/A | - | - | |
| 8. | CONFORMITY OF IN-PHASE COMPONENT | N/A | - | - | |
| 9. | TOTAL INPUT IMPEDANCE | N/A | - | - | |
| 10. | OUTPUT SMOOTHNESS | 0.01 % | O | A | |
| 11. | ELECTRICAL TRAVEL | 338° | O | A | |
| 12. | ELECTRICAL OVERTRAVEL | N/R | - | - | |
| 13. | MECHANICAL OVERTRAVEL | N/R | - | - | |
| 14. | CONTINUITY TRAVEL | 358 max | N | A | |
| 15. | INDEX POINT | N/R | - | - | |
| 16. | CONFORMITY DEFINITION | Independent Linearity | O | A | |
| 17. | PHASING | N/A | - | - | |
| 18. | TAP LOCATION | N/R | - | - | |
| 19. | EFFECTIVE TAP WIDTH | N/A | - | - | |
| 20. | BACKLASH | 0.1 deg. max | O | A | |
| 21. | RESOLUTION | Virtually Infinite | N | Q | |
| 22. | MINIMUM VOLTAGE | 0.1 % max | O | A | |
| 23. | END VOLTAGE | 0.01 % min, 0.58 4% max. | O | A | |

3.5 REQUIREMENTS OF INDIVIDUAL SECTIONS

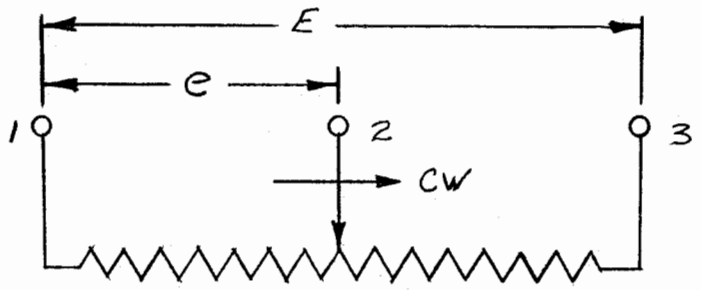
3.5.1 Total Resistance

4500 - 5500 Ω

3.5.2 Function Characteristic

When measured in accordance with the schematic diagram the output ratio e/E shall exhibit independent linearity ± 0.1% over the theoretical travel.

θ increases in a CW direction.




test using tape number 2-1540

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Form 1002

3.6 Marking: The potentiometer shall be permanently and legibly marked as follows:

3.6.1 The size and color of the marking shall be as follows:

(A) Size (height) - 1/16
(B) Color - White

3.6.2 The marking on the cylindrical surface shall consist of the following:

(A) NEI logotype and MFR 08815
(B) NEI type number: 116FL1-431
(C) Terminal identification (per figure 1)
(D) Electronic Industries Association date code
(E) E & S Corp 20418SOCN 881048-1

4.0 Quality Assurance Provisions

4.1 Test Data: Generic MIL-R-39023 group A test data form shall be supplied if required per applicable purchase order.

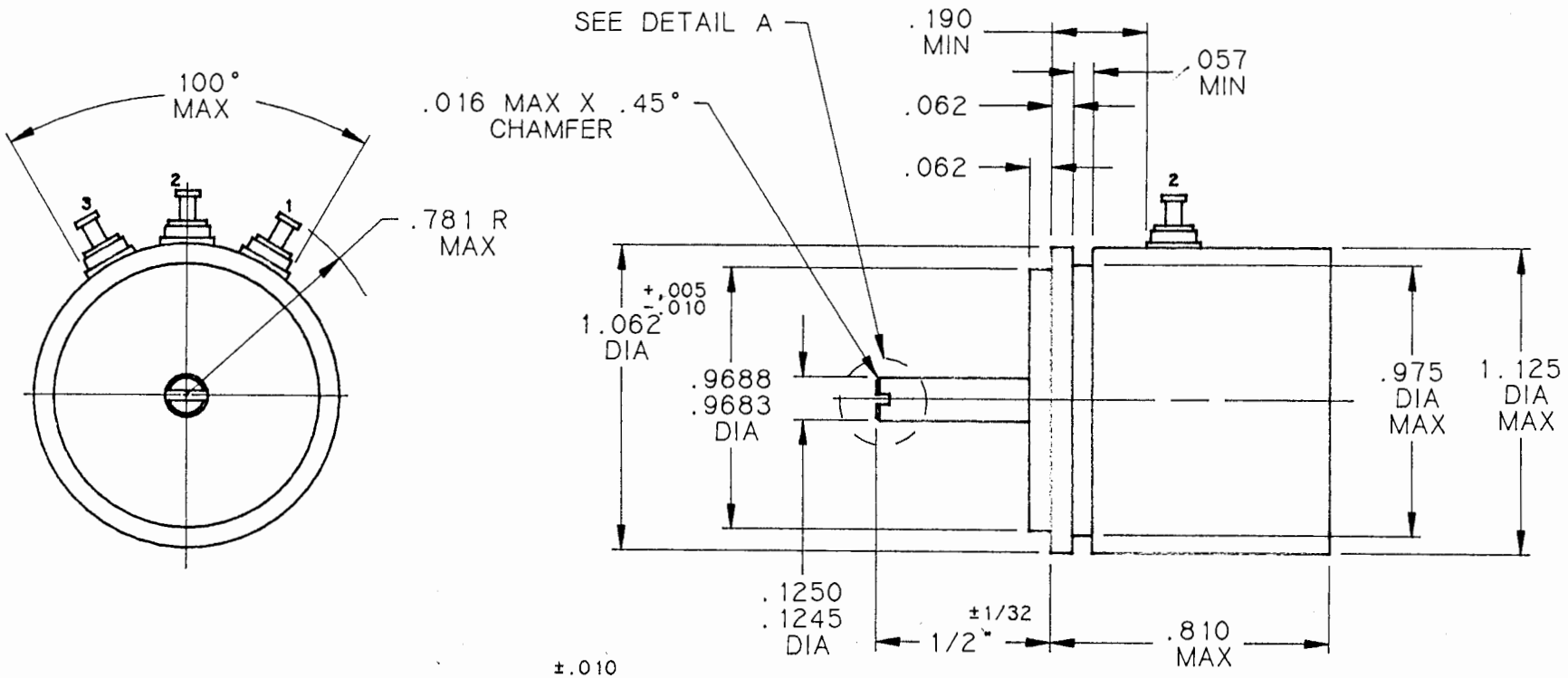
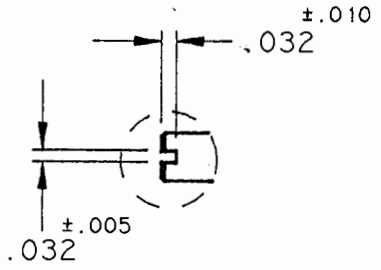



FIGURE 1




DETAIL A

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| A | 08815 | 1228-0431-00 | REV A |
| | | SCALE: NTS | |

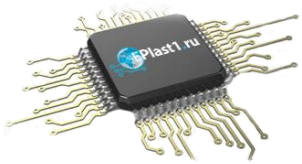
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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