

BEI Electronics, Inc.
Industrial Encoder
Division

7230 Hollister Avenue
Goleta, California 93117-2891
(805) 968-0782

Specification

924-02002-004

INCREMENTAL OPTICAL ENCODER

CUSTOMER: WATERBURY FARREL DIVISION OF TEXTRON, INC.

SPECIAL FEATURES: FRONT MOUNT ADAPTOR
GAS PORTED
NONSTANDARD CONNECTOR

BEI MODEL

H25N-F1-SS-2000-ABZC-8830-LED-SM20-27-S
H25N-F1-SS- 100-ABZC-8830-LED-SM20-27-S
H25N-F1-SS-1000-ABZC-8830-LED-SM20-27-S
H25N-F1-SS- 256-ABZC-8830-LED-SM20-27-S

01007-017
01007-018
01007-019
01007-023
7-024
7-025

60
1024

Notice: The design and specifications of the instruments and accessories illustrated and described in this publication are subject to improvement without notice.

| | | | |
|-----|---------------------------------------|---------|------------------------------|
| C | REPOSITIONED 1/8 PORTS, CHANGED COVER | 2/20/02 | PREP BY Doug McGuire |
| B | ECN 1922 - LED CHANGE | 6/24/87 | CHK |
| A | ECN 1199 | 8/29/87 | APPD Jerry Jandt |
| REV | DESCRIPTION | DATE | © 1979 BEI Electronics, Inc. |

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REV B



SPECIFICATIONS

1.0 Scope: This specification describes the BEI Industrial Encoder Division Heavy Duty Type H25 Incremental Optical Encoder with special provisions to meet the requirements of Waterbury Farrell Div. of Textron, Inc.

2.0 Mechanical Specifications

- | | | |
|------|--|--|
| 2.1 | Dimensions | See Figure 2 |
| 2.2 | Shaft Loading | Up to 40 lbs Axial and 35 lbs Radial |
| 2.3 | Shaft Runout | .0005 T.I.R. |
| 2.4 | Starting Torque at 25°C | 5.0 Oz. In. Max. |
| 2.5 | Bearings | Class ABEC 7 |
| 2.6 | Shaft | 416 Stainless Steel with Shaft Seal |
| 2.7 | Housing and Cover | Die Cast Aluminum |
| 2.8 | Bearing Life (mfr's specifications) | 2×10^8 Revs at rated shaft loading. 5×10^{10} Revs at 10% of rated shaft loading |
| 2.9 | Moment of Inertia | 4.1×10^{-4} Oz. In. Sec. ² |
| 2.10 | Slew Speed | 5000 RPM Max. |
| 2.11 | Weight | 25 Oz. Max. |
| 2.12 | Acceleration | 2.5×10^5 Radians per Sec. ² |

3.0 Electrical Specifications

- | | | |
|-----|-----------------------|--|
| 3.1 | Code | Incremental |
| 3.2 | Cycles Per Shaft Turn | 2000, 1000 or 100 |
| 3.3 | Supply Voltage | + 5V $\pm 5\%$ |
| 3.4 | Current Requirements | 200 Ma Max. |
| 3.5 | Output | From DM8830 T ² L Line Driver |
| 3.6 | Output Format | 2 Channels (A and B) in quadrature, index and comple- mentary outputs. See Figure 1. |

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TITLE

NO.

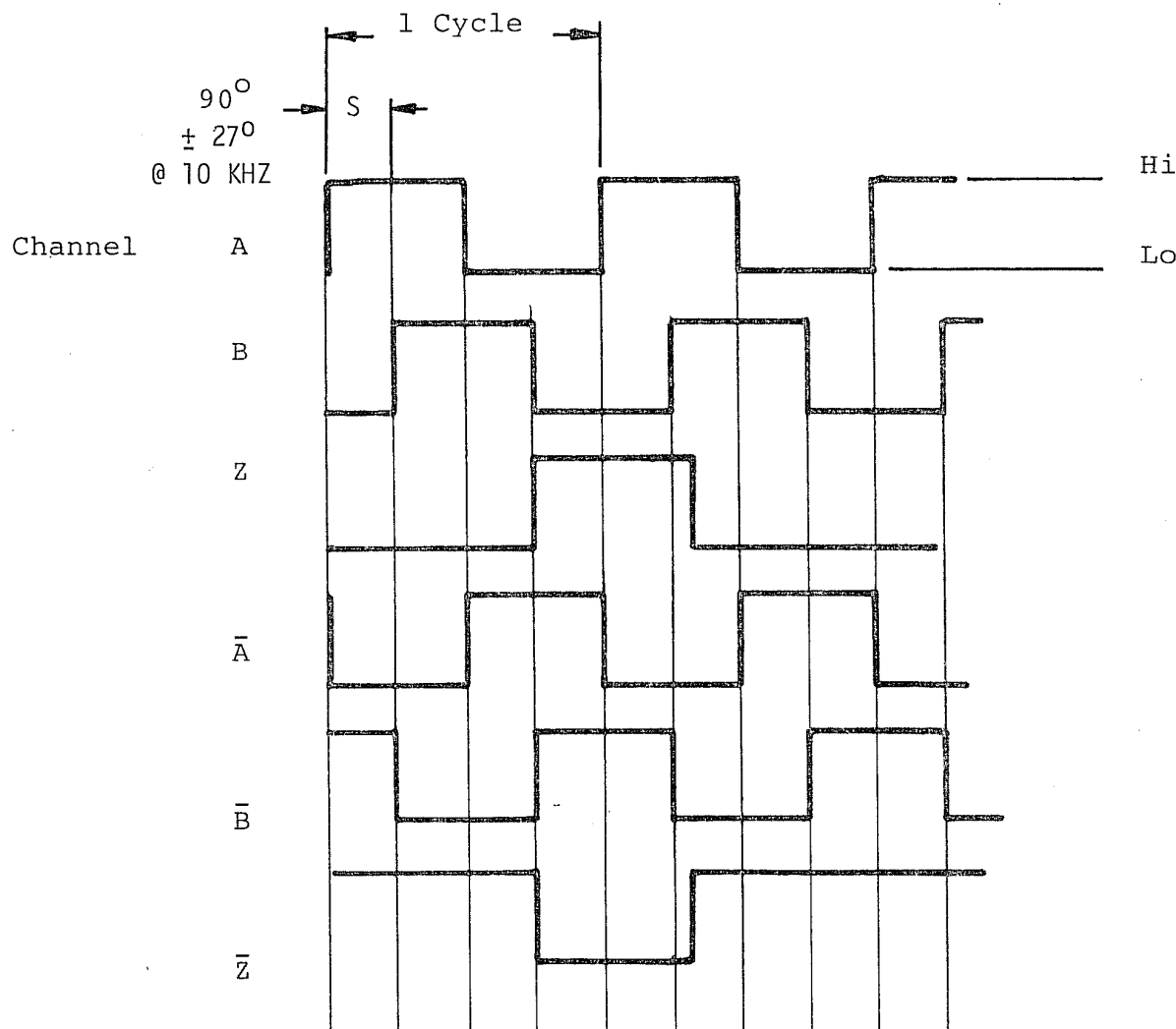
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SPECIFICATIONS

| | | |
|-----|--|-----------------------------|
| 3.7 | ILLUMINATION | LED |
| 3.8 | FREQUENCY RESPONSE (CHANNELS A AND B) | 75 KHZ |
| 3.9 | FREQUENCY RESPONSE (INDEX) | 75 KHZ |
| 4.0 | <u>ENVIRONMENTAL SPECIFICATIONS</u> | |
| 4.1 | TEMPERATURE | |
| | OPERATING | 0° to 70°C |
| | STORAGE | -25° to 90°C |
| 4.2 | SHOCK | 50 G's for 11 MSEC duration |
| 4.3 | VIBRATION | 5 to 2000 HZ @ 20 G's |
| 4.4 | HUMIDITY | 98% RH without condensation |
| 5.0 | <u>TERMINATION FROM MS3102E20-27P</u> | |

| <u>PIN NO.</u> | <u>FUNCTION</u> |
|----------------|-----------------|
| A | LED +5V |
| B | LED GROUND |
| K | LED +5V |
| L | LED GROUND |
| J | CIRCUIT +5V |
| I | CIRCUIT GROUND |
| C | CH. <u>A</u> |
| D | CH. <u>A</u> |
| G | CH. <u>B</u> |
| H | CH. <u>B</u> |
| E | <u>INDEX</u> |
| F | <u>INDEX</u> |



S \equiv Transition Spacing
at 75 KHZ S $\geq 30^\circ$

Index shall include one and only one transition of Channel A. This transition is positive-going in the CCW direction.

CCW ROTATION
VIEWING SHAFT

FIGURE 1
OUTPUT WAVE FORMS

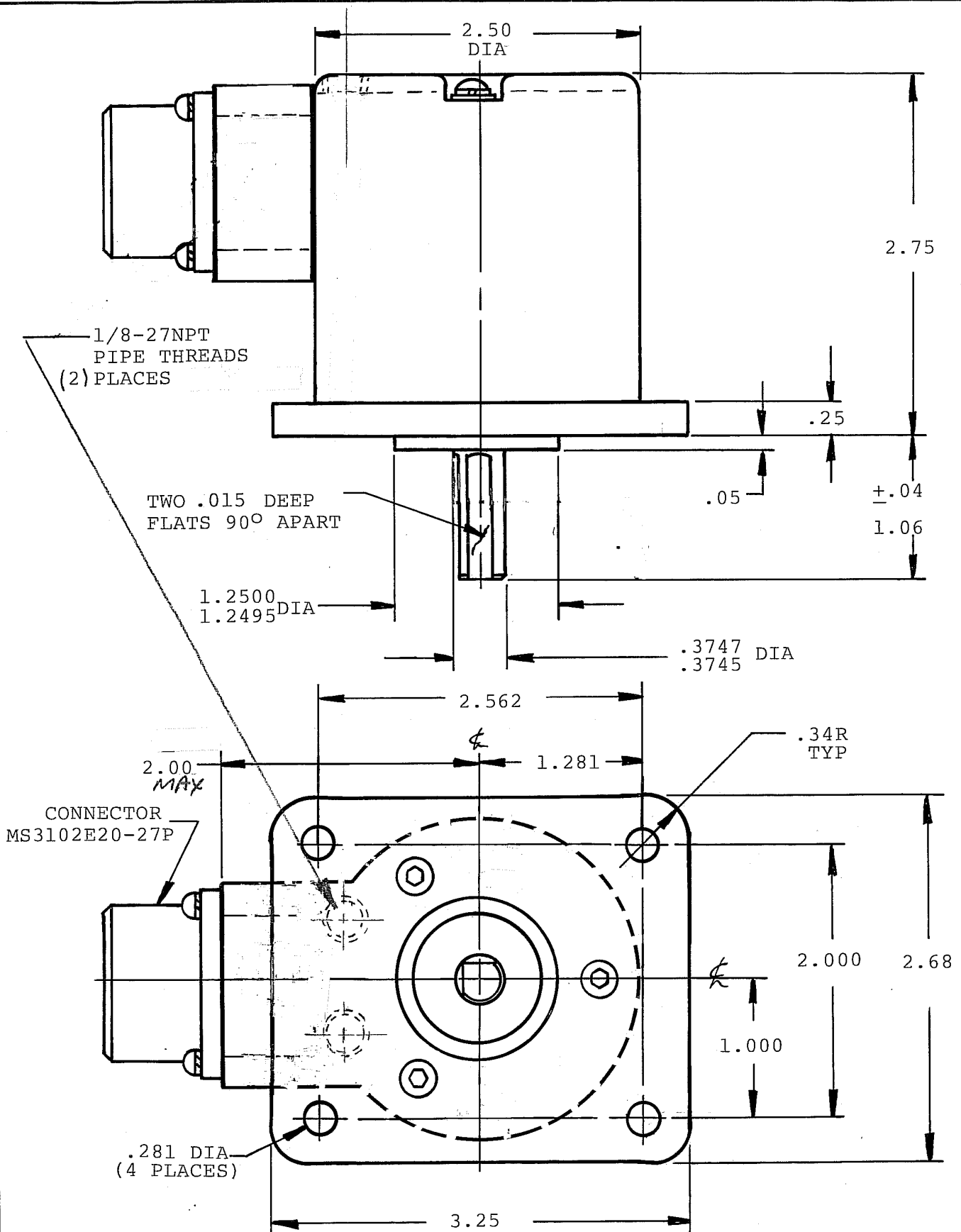


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FORM 777-5-2