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SPECIFICATION

924-02057-001

OPTICAL ROTARY ENCODER

INCREMENTAL

MODEL NUMBER

PART NUMBER

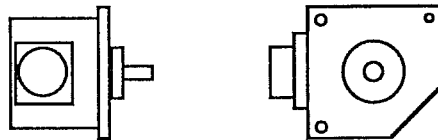
H25Z-SB-5000-M2-ABZC-75158-LED-SM22

924-01047-002

H25Z-SB-5000-M2-ABZC-75158-LED-SM20

924-01047-003

MITSUBISHI PART NO. OSE 5 KN-ETI-3-9.52-0



D1	ECO-1103 (ADD Note 5.8 & 5.9 - DESIGN PARAMETER NOT INDIVIDUALLY TESTED)	9/2/08	
D	ADDED 924-01047-003	4/4/90	
C	CHANGED POS OF SHAFT FLATS ECN 2054	12/8/88	PREP MCGUIRE 10/88
B	REV PARA 3.6.1, 3.6.2, FIG 1.	11/17/88	CHK LAPLANTE 10/88
A	REVISED FOR PRODUCTION MODEL		APPD JANDT 10/88
LTR	REVISION	DATE	

1.0 SCOPE

THIS SPECIFICATION COVERS A ROTARY OPTICAL ENCODER MADE FOR MITSUBISHI CNC COMPANY. BASIC FEATURES INCLUDE M2 INTERPOLATED OUTPUT WITH INDEX . A SPECIAL ADAPTER PLATE IS ATTACHED TO THE ENCODER FACE.

2.0 MODEL NUMBER

H25Z-SB-5000-M2-ABZC-75158-LED-SM22

BEI PART NO. 924-09147-002

MITSUBISHI MODEL NO. OSE 5KN-ETI-3-9.52-0

5000P/R, JA3102A22-14P CONNECTOR

H25Z-SB-5000-M2-ABZC-75158-LED-SM20

BEI PART NO. 924-09147-003

MITSUBISHI MODEL NO. OSE 5KN-ETI-3-9.52-0

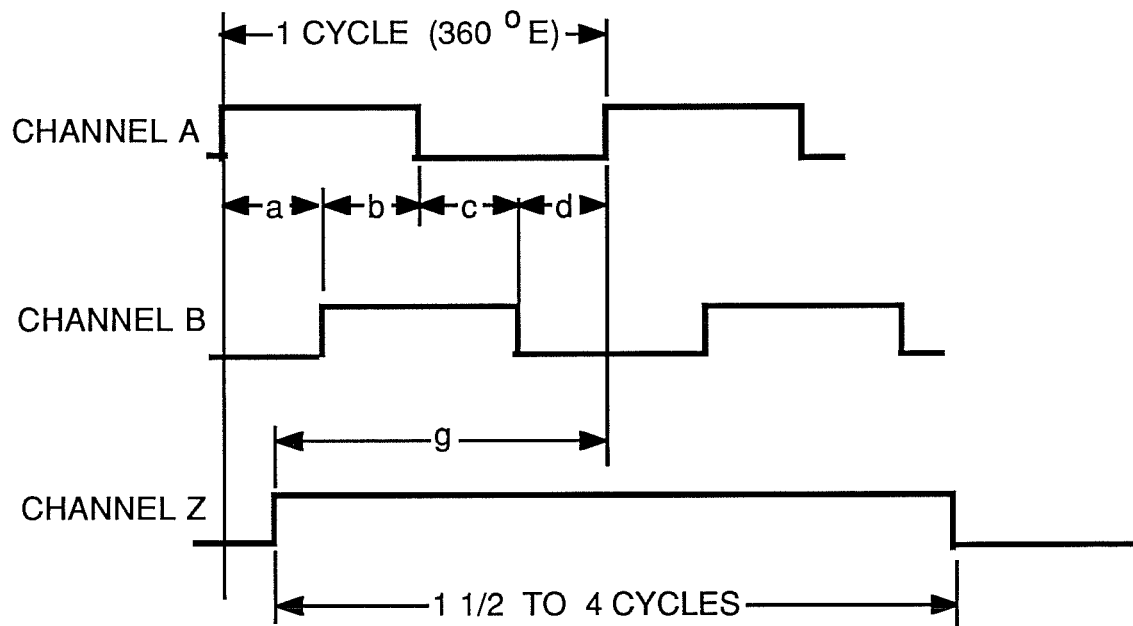
5000P/R, *MS3102R20-29P* CONNECTOR

3.0 ELECTRICAL SPECIFICATIONS

(UNDER 0 TO MAX SPEED)

3.1 SUPPLY VOLTAGE	+5 VDC + 5%, -10% (COMMERCIAL I.C.'S ARE USED)
3.2 CURRENT REQUIREMENT	250 MA MAX
3.3 OUTPUT	FROM SN75158
<u>3.5 CHANNEL A AND B (FIG. 1)</u>	
3.5.1 RESOLUTION	5000 CYCLES PER REV
3.5.2 FREQUENCY RESPONSE	300 KHZ
3.5.3 PHASE SHIFT (a,b,c,d)	1/4 ±1/8 CYCLE (90±45 DEG. E)
3.5.4 ONE CYCLE ERROR	1/10 CYCLE
3.5.5 CUMULATIVE PITCH ERROR	1/4 CYCLE
3.5.6 ADJACENT PITCH ERROR	1/12 CYCLE
<u>3.6 CHANNEL Z</u>	
3.6.1 Z PULSE WIDTH	1 1/2 TO 4 CYCLES
3.6.2 PHASE SHIFT	g =3/4 TO 2 CYCLES. TEST AT 500 RPM
3.6.3 LOCATION OF SHAFT FLAT RELATIVE TO RISE OF Z	±5 DEG MECHANICAL
3.6.4 NO. OF CYCLES	1 PER REV.
3.6.5 FREQUENCY RESPONSE	60 HZ
<u>3.8 NOISE SUPPRESSION CAPACITOR</u>	0.1 UFD, 50V CAPACITOR BETWEEN 0V AND CASE GROUND (INSTALL AFTER HIGH POT TEST)

FIGURE 1

A, B AND Z CHANNELS

4.0 MECHANICAL SPECIFICATIONS:

4.1 BEARING LIFE	10X 10 ⁹ REVOLUTIONS AT 70 ⁰ C
4.2 SHAFT RUNOUT	.004" MAX
4.3 SHAFT RADIAL LOAD	5 LBS
4.4 SHAFT AXIAL LOAD	2.5 LBS
4.5 INERTIA	4.1 X 10 ⁻⁴ OZ-IN-SEC ²
4.6 TORQUE	1.50 OZ-IN MAX AT 25 DEG. C.
4.7 SHAFT AXIAL PLAY	.0004" MAX UNDER 1 LB LOAD
4.8 SHAFT RADIAL PLAY	.0008" MAX UNDER 1 LB LOAD
4.9 BEARING PROTECTION	FRONT BEARING RUBBER SEALED
4.10 CONNECTOR LOCATION	SEE FIGURE 2
4.11 HOUSING MATERIAL	ALUMINUM, CHEM FILM TREATED
4.12 SHAFT MATERIAL	STAINLESS STEEL 416
4.13 ALLOWABLE SPEED	5000 RPM
4.14 STRUCTURAL LOADING STRENGTH	80 KG MIN. (175 LBS)
4.15 ON FLOOR STRENGTH	70 KG MIN. (154 LBS)

5.0 ENVIRONMENTAL CONDITIONS:

5.1 VIBRATION	10 TO 50 HZ, 1.5 MM FULL AMPLITUDE IN AXIAL AND RADIAL DIRECTIONS.
5.2 SHOCK	30 G FOR 11 MSEC, 10 IMPACTS IN AXIAL AND RADIAL DIRECTIONS
5.3 TEMPERATURE	-10 TO 75 DEG. C (COMMERCIAL I.C.'S ARE USED)
5.4 HUMIDITY	90% AT 40 DEG C.
5.5 WATER TIGHTNESS	UNIT SHALL BE SPLASH PROOF WHEN THE CONNECTOR AND THE BEARING ARE PROTECTED. .
5.6 MAX SPEED	3600 RPM
5.7 MAX ANGULAR ACCELERATION	6000 RADIANS / SEC ²

NOTE: THE CAPACITOR BETWEEN
0V AND CASE GROUND MUST BE
DISCONNECTED FOR THESE TESTS

5.8 DIELECTRIC WITHSTAND VOLTAGE

*DESIGN PARAMETER - NOT
INDIVIDUALLY TESTED.*

APPLY 500 VAC BETWEEN BODY OF
ENCODER AND ALL OUTPUT PINS
EXCEPT CASE GROUND FOR ONE
MINUTE.

5.9 INSULATION RESISTANCE

*DESIGN PARAMETER -
NOT INDIVIDUALLY TESTED*

50 MEGOHM MIN.
MEASURED BY 500V MEGOHM
METER BETWEEN EACH CONNECTOR
PIN AND CASE.

6.0 OUTPUT TERMINATION

CONNECTORS ARE EITHER *M53102R20-29P* OR JA3102-A22-14P AS SPECIFIED
IN MODEL NUMBER AS SM20 OR SM22 RESPECTIVELY.

PIN	FUNCTION
A	\overline{A}
B	\overline{A}
C	\overline{B}
D	\overline{B}
F	\overline{Z}
G	\overline{Z}
R	0V
S	+5VDC
N	CASE GND

A REVISED SHAFT PILOT DIMS. CONN DIM
 WAS 65, IS 49
 B ADDED ENGLISH DIMENSIONS
 C ROTATED SHAFT FLAT PER CUST DWG. 12/8/88

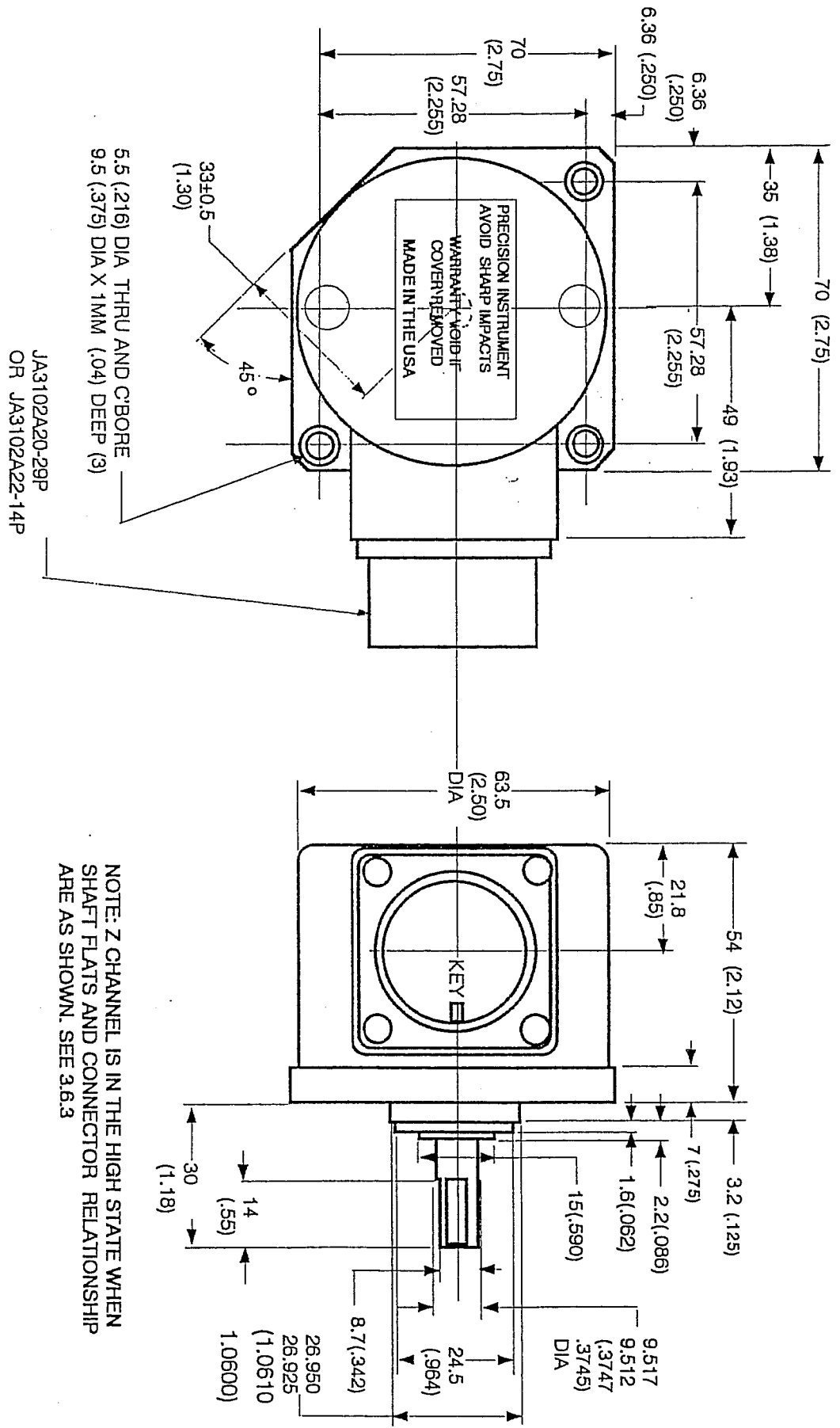


FIGURE 2