ENGINEERING RESPONSIBILITY ☐ SEPIA ☐

0	1	2	3	4		6		8	9		11	12	14	15
16	17		19		21	22	23	25	29	30	32	33	38	43
45	46	61	63											

B-1000-0678-1

SYM	REVISIONS	APPROVED	DATE
A	ISSUE PER PPNR 33137	[illegible]	5/7/84

GENERAL SPECIFICATIONS:

THESE SPECIFICATIONS ESTABLISH THE REQUIREMENTS FOR A 56mm TWO CHANNEL OPTICAL ENCODER CAP AND BODY.

1. TWO DATA CHANNELS "A" AND "B".
2. INPUT POWER: 5.0 + 10% VDC AT 40mA MAX.
3. OUTPUT SIGNAL: TTL COMPATIBLE (SEE FIG. 1).
   - 3.1 LOGIC "1": 2.4 VDC MIN @ −40 nA.
   - 3.2 LOGIC "0": 0.7 VDC MAX WITH 1.6 mA "SINK" CURRENT MAX.
4. RESOLUTION: 1000 LINES/REV. (4000 TRANSITIONS/REV. ON BOTH CHANNELS COMBINED.)
5. OPERATING SPEED: UP TO 130 KHz.
6. OPERATING TEMPERATURE: −20° TO 85° C.
7. ENCODER BODY COMES WITH 10 CONDUCTOR RIBBON CABLE, TERMINATED WITH 10 POSITION POLARIZED CONNECTOR (HP# 1251-4006).
   - 7.1 CABLE LENGTH: 2.750 IN. ± .50 IN.

Encoder Inertia 1.1×10^{-4} oz-in-s²

FIGURE 1

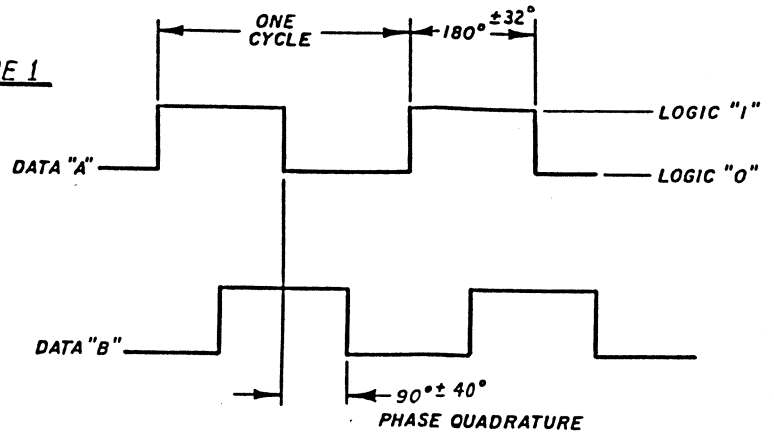
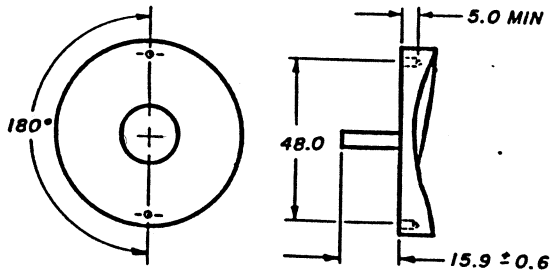


FIGURE 2 MOUNTING REQUIREMENTS



OUTPUT SIGNALS

CCW ROTATION LOOKING DOWN AT PHOTOHEAD.

T = 25° C F = 8KHz

METRIC

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETRES

THIRD ANGLE PROJECTION

TOLERANCES: .X ± 0.5 mm, .XX ± 0.1 mm

STRIKE OUT ONE XX AND ONE XX.X SEE CORP. STD. 608

DO NOT SCALE THIS DRAWING

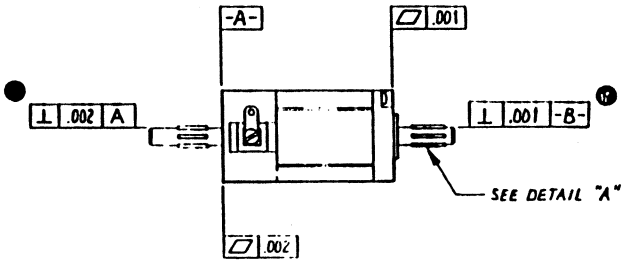
ITEM	QTY.	MATERIAL-DESCRIPTION	MAT'L-PART NO.	MAT'L-DWG. NO.	MAT'L-SPEC.

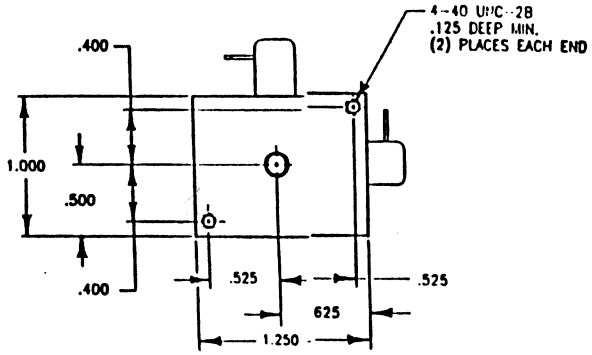
DRAWN BY: Michael Gootee	DATE: 5-03-84	TITLE: CAP-OPTICAL ENCODER	HEWLETT PACKARD
ENGINEER: JIM McGETTERICK	DATE: 5-03-84		
RELEASE TO PROD.	DATE: 5/7/84	NEXT ASSEMBLY: SEE WHERE USED	PART NUMBER: B-1000-0678-1
SUPERSEDES DWG.		FINISH: NONE SCALE: NONE	

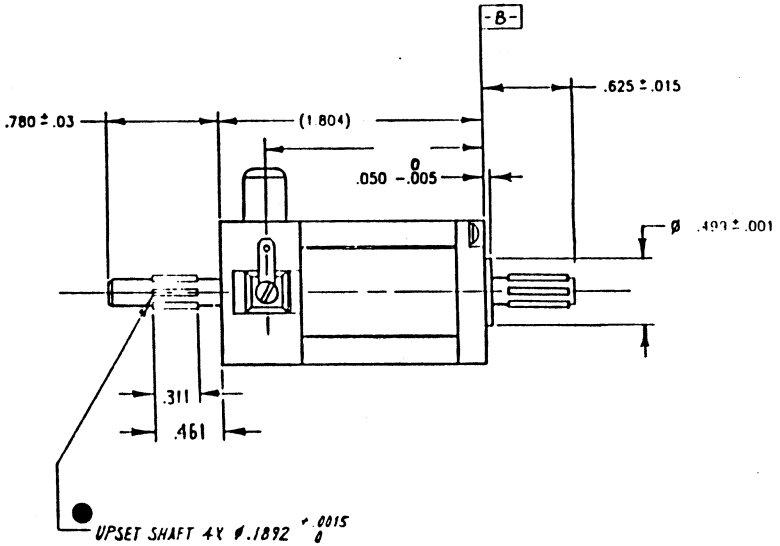
NOTES:

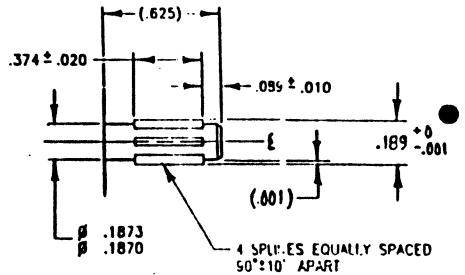
1. MECHANICAL INFORMATION:
   - 1.1 BRUSHES: SILVER GRAPHITE.
   - 1.2 BEARINGS: DOUBLE SHIELDED ABEC-3 BALL BEARINGS.
   - 1.3 SHAFT PRELOAD: PRELOAD WASHER AT COMMUTATOR END OF ARMATURE (SUCH THAT THE SHAFT DOES NOT MOVE AXIALLY WHEN PRESSING IN ON COMMUTATOR-END SHAFT EXTENSION) ENDPLAY .002-.010in WITH 8lb. AXIAL LOAD.
   - 1.4 ROTATION SHALL BE CLOCKWISE FACING MOUNTING END WITH POSITIVE VOLTAGE APPLIED TO THE COMMUTATOR ON THE WIDE SIDE.
   - 1.5 RFI SUPPRESSION RING ON COMMUTATOR.
2. MOTOR PERFORMANCE INFORMATION:
   - 2.1 ARMATURE VOLTAGE (VOLTS): 19.1
   - 2.2 TORQUE CONSTANT (in-oz/A): 5.06
   - 2.3 TERMINAL RESISTANCE (ohms): 3.88
   - 2.4 STALL CURRENT (amps): 4.92
   - 2.5 STALL TORQUE (in-oz): 24.44
   - 2.6 NO LOAD CURRENT (amps): .202
   - 2.7 NO LOAD SPEED (rad/sec): 507
   - 2.8 MOTOR CONSTANT (in-oz/ $\sqrt{watt}$): 2.52
   - 2.9 BACK EMF (volts/rad/sec): 0.0357
   - 2.10 INDUCTANCE (MILLI-HENRYS): 1.76
   - 2.11 DAMPING, ZERO SOURCE IMPEDIANCE (in-oz/rad/sec): 0.0461
   - 2.12 DAMPING, INFINITE SOURCE IMPEDIANCE (in-oz/rad/sec): 3.88×10^{-4}
   - 2.13 ELECTRICAL TIME CONSTANT (MILLI-SEC): 0.45
   - 2.14 MECHANICAL TIME CONSTANT (MILLI-SEC): 4.73
   - 2.15 STARTING FRICTION (in-oz): 0.34
   - 2.16 INERTIA (in-oz-sec^2): 2.18×10^{-4}
   - 2.17 WINDING TEMPERATURE (DEG. c): 155 MAX.
3. ⓒ INDICATES CONTROL DIMENSION

SYM	REVISIONS	APPROVED	DATE
D	REVISED & REDRAWN PER ECR 261597		









DETAIL "A"

DO NOT SCALE THIS DRAWING

ENGLISH

UNLESS OTHERWISE SPECIFIED
- DIMENSIONS ARE IN INCHES
- THIRD ANGLE PROJECTION
- TOLERANCES

± .005 in

STRIKE OUT OR FILL IN AS NEEDED

REFERENCE TO DWG A 5951 1601 1 ICO STD SECTION 8081 REQUIRED

ITEM	QTY	PART/MATERIAL DESCRIPTION	MAT'L PART NO.	MAT'L DWG NO.	MAT'L SPEC
				1	

DRAWN BY M. COOTEE — 13 JULY '84
ENGINEER/CHECKER JIM RUDER — 25 JAN '85
RELEASE TO PROD. — 1/25/85
SUPERSEDES A-3140-0647-1 — 23 MAR '81

D.C. MOTOR

HEWLETT PACKARD

PART NUM. 40-0647

SCALE NONE | SHEET 1 OF 1

C-3140-0647-1