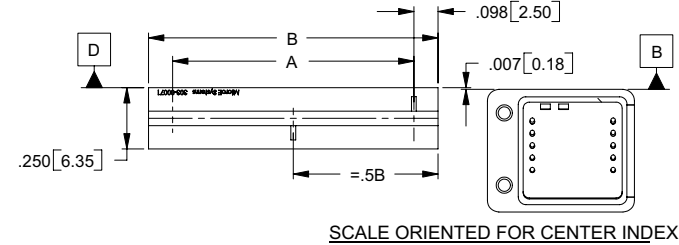
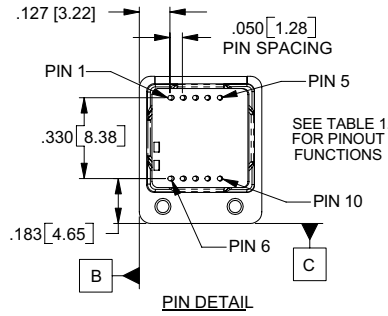
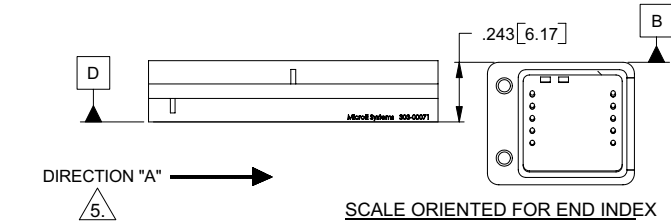
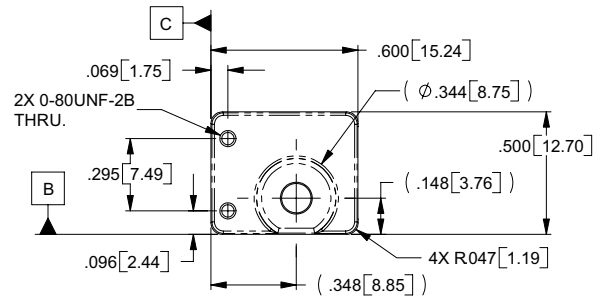
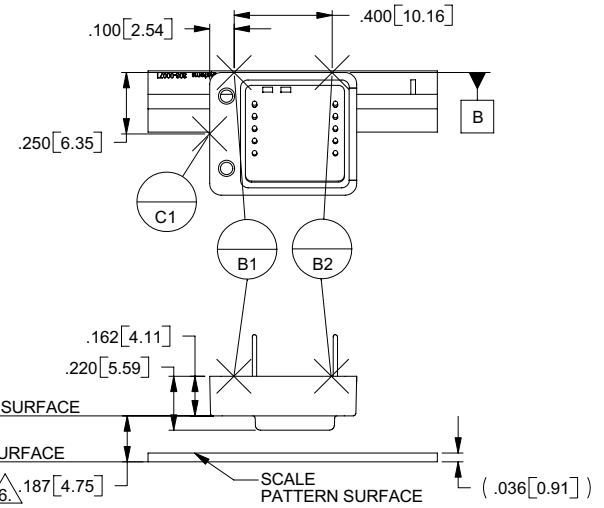
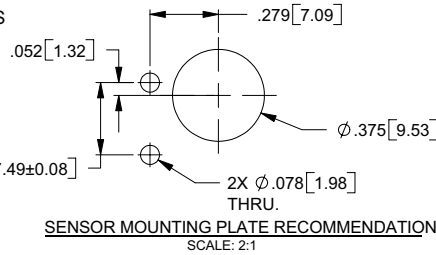
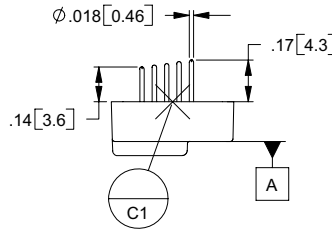


Mercury 1200 Encoder System Interface Drawing: Short Linear Scales

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SCALES SHOWN IN THESE VIEWS TRANSLATED IN X AXIS OUT OF OPERATING RANGE FOR CLARITY



- NOTE:**
- IF BENCHING PINS ARE TO BE USED, PINS MUST BE PLACED ALONG DATUM EDGES OF BOTH THE SENSOR AND THE SCALE FOR PROPER ALIGNMENT. (REFERENCE DATUMS B1, B2 AND C1 FOR SENSOR BENCHING PINS).
 - HEIGHT OF SENSOR BENCHING PINS MUST BE A MINIMUM OF .162 [4.11] IN HEIGHT FROM DATUM A.
 - HEIGHT OF SCALE BENCHING PINS NOT TO EXCEED THE THICKNESS OF THE SCALE.
 - RECOMMENDED SENSOR MOUNTING PLATE THICKNESS: ALLOW FOR PLATE THICKNESS AND CLEARANCE OF SCREW HEAD TO SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACES, CLAMPS, HUBS, ETC.)

5. WHEN SCALE MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY READHEAD, OUTPUT SIGNAL SIN+ (PIN 1) LEADS OUTPUT SIGNAL COS+ (PIN 3).

6. FOR SCALES ATTACHED WITH ADHESIVE TAPE (LXX-T), THE SCALE MOUNTING SURFACE MUST BE .006" FURTHER AWAY FROM SENSOR MOUNTING SURFACE FOR NOMINAL Z HEIGHT DIM = .193 [4.90]

SCALE IDENTIFICATION AND SIZE.

Scale Identification #	Dim A. Measured Length	Dim B. Scale Length
LXX	XXmm-5mm	XXmm
L30	30mm-5mm = 25mm	30mm
T. (max) L130	130mm-5mm = 125mm	130mm

THESE ARE EXAMPLES

TABLE 1.

Pin	Function
1	SIN+
2	SIN-
3	COS+
4	COS-
5	+5V
6	N/C
7	N/C
8	INDEX WINDOW-
9	INDEX WINDOW+
10	GND

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES (millimeters) DIM. APPLY AFTER PROCESSING INTERPRET ALL GEOMETRIC TOLS. PER ANSI Y14.5M-1994

TOLERANCES ARE:
DECIMALS: .XX [X]±.01 [25]
XXX [X]±.005 [13]

ANGULAR: ±30 MIN.

APPROVALS

APPROVALS	DATE
DRAWN: S.BUTURLIA	4/23/01
CHECKED:	
ENGRG: DON GRIMES	6/5/02
INFO ENG: M.SKWIRA	6/6/02
QA: J.FARNAM	6/6/02

UNITS: .in [mm]

MicroE Systems

DESCRIPTION:
INTERFACE, ENCODER, 20um, SHORT LINEAR MERCURY 1200 SENSOR

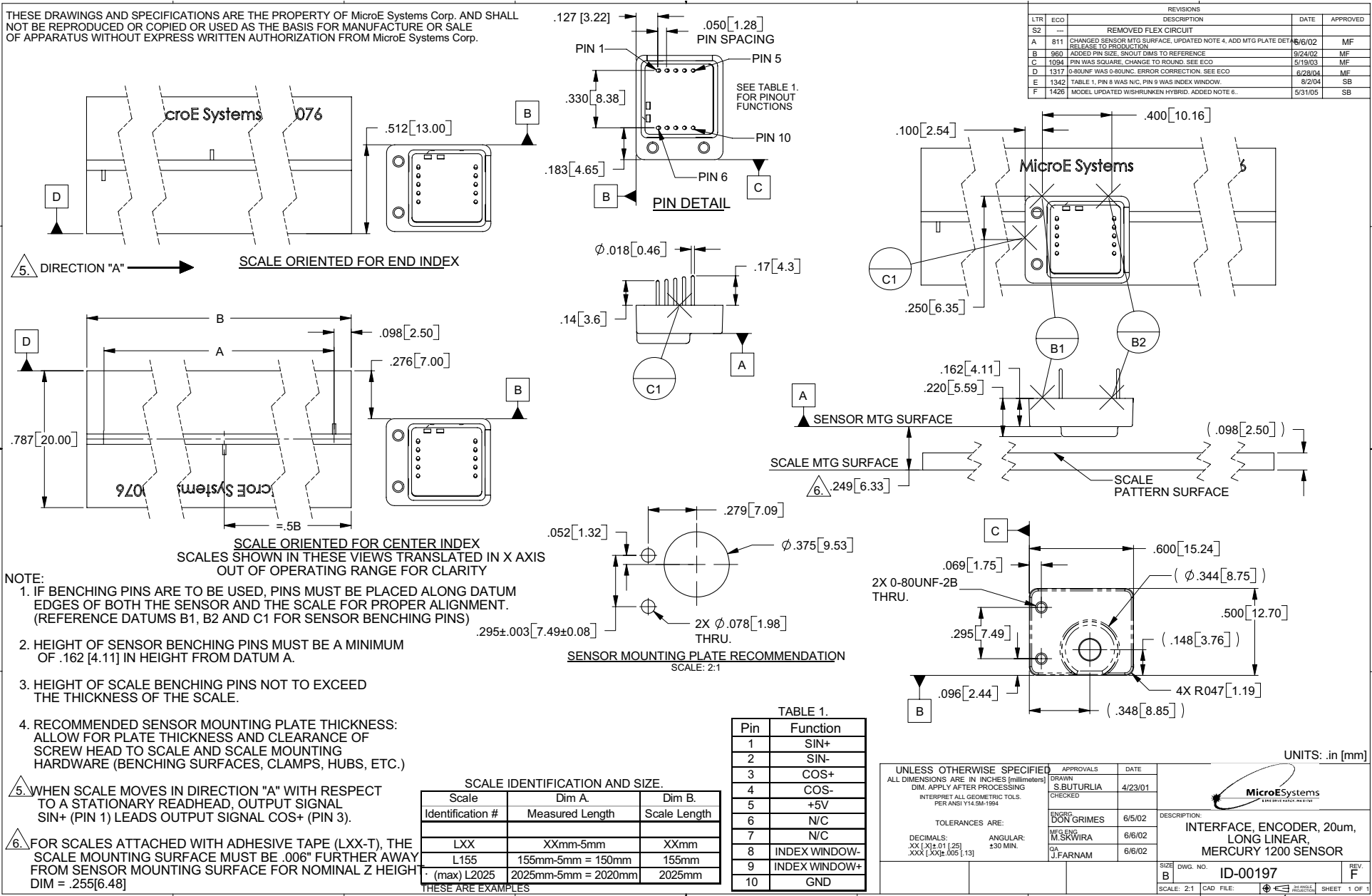
SIZE: B
DWS. NO.: ID-00196
SCALE: 2:1 CAD FILE: [Symbol] SHEET 1 OF 1

REVISIONS

LTR	ECO	DESCRIPTION	DATE	APPROVED
S2	---	REMOVED FLEX CIRCUIT		
A	811	CHANGE SENSOR MOUNTING SURFACE. UPDATED NOTES. ADD DETAIL MOUNTING PLATE. RELEASE TO PRODUCTION	6/6/02	MF
B	860	ADDED PIN SIZE. SNOUT DIMS TO REFERENCE. THK WAS .037	9/24/02	MF
C	1094	PIN WAS SQUARE. CHANGED TO ROUND. SEE ECO	9/19/03	MF
D	1317	INDEX WINDOW WAS 0-RISING. ERROR CORRECTION	6/22/04	MF
E	1342	TABLE 1. PIN 8 WAS N/C. PIN 9 WAS INDEX WINDOW.	8/2/04	SB
F	1426	MODEL UPDATED WISHRUNKEN HYBRID. ADDED NOTE 6.	5/25/05	SB

Mercury 1200 Encoder System Interface Drawing: Long Linear Scales

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REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED
S2	---	REMOVED FLEX CIRCUIT		
A	811	CHANGED SENSOR MOUNTING SURFACE. UPDATED NOTE 4. ADD MOUNTING PLATE DETAIL. RELEASE TO PRODUCTION	6/6/02	MF
B	860	ADDED PIN SIZE. SHOW DIMS TO REFERENCE	9/24/02	MF
C	1094	PIN WAS SQUARE. CHANGE TO ROUND. SEE ECO	5/19/03	MF
D	1317	0-80UNF WAS 0-80UNC. ERROR CORRECTION. SEE ECO	6/28/04	MF
E	1342	TABLE 1, PIN 8 WAS N/C. PIN 9 WAS INDEX WINDOW.	8/2/04	SB
F	1426	MODEL UPDATED W/SHRUNKEN HYBRID. ADDED NOTE 6.	5/31/05	SB

5. DIRECTION "A" → SCALE ORIENTED FOR END INDEX

SCALE ORIENTED FOR CENTER INDEX
SCALES SHOWN IN THESE VIEWS TRANSLATED IN X AXIS
OUT OF OPERATING RANGE FOR CLARITY

- NOTE:
- IF BENCHING PINS ARE TO BE USED, PINS MUST BE PLACED ALONG DATUM EDGES OF BOTH THE SENSOR AND THE SCALE FOR PROPER ALIGNMENT. (REFERENCE DATUMS B1, B2 AND C1 FOR SENSOR BENCHING PINS)
 - HEIGHT OF SENSOR BENCHING PINS MUST BE A MINIMUM OF .162 [4.11] IN HEIGHT FROM DATUM A.
 - HEIGHT OF SCALE BENCHING PINS NOT TO EXCEED THE THICKNESS OF THE SCALE.
 - RECOMMENDED SENSOR MOUNTING PLATE THICKNESS: ALLOW FOR PLATE THICKNESS AND CLEARANCE OF SCREW HEAD TO SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACES, CLAMPS, HUBS, ETC.)

5. WHEN SCALE MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY READHEAD, OUTPUT SIGNAL SIN+ (PIN 1) LEADS OUTPUT SIGNAL COS+ (PIN 3).

6. FOR SCALES ATTACHED WITH ADHESIVE TAPE (LXX-T), THE SCALE MOUNTING SURFACE MUST BE .006" FURTHER AWAY FROM SENSOR MOUNTING SURFACE FOR NOMINAL Z HEIGHT DIM = .255[6.48]

SCALE IDENTIFICATION AND SIZE.

Scale Identification #	Dim A. Measured Length	Dim B. Scale Length
LXX	XXmm-5mm	XXmm
L155	155mm-5mm = 150mm	155mm
(max) L2025	2025mm-5mm = 2020mm	2025mm

THESE ARE EXAMPLES

TABLE 1.

Pin	Function
1	SIN+
2	SIN-
3	COS+
4	COS-
5	+5V
6	N/C
7	N/C
8	INDEX WINDOW-
9	INDEX WINDOW+
10	GND

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES (millimeters)
DIM. APPLY AFTER PROCESSING
INTERPRET ALL GEOMETRIC TOLS.
PER ANSI Y14.5M-1994

TOLERANCES ARE:
DECIMALS: XX [X]±.01 [25]
XXX [XX]±.005 [13]

ANGULAR: ±30 MIN.

APPROVALS	DATE
DRAWN: S.BUTURLIA	4/23/01
CHECKED:	
ENGRG: DON GRIMES	6/5/02
MFG SVCS: M.SRIVIRRA	6/6/02
QA: J.FARNAM	6/6/02

UNITS: .in [mm]

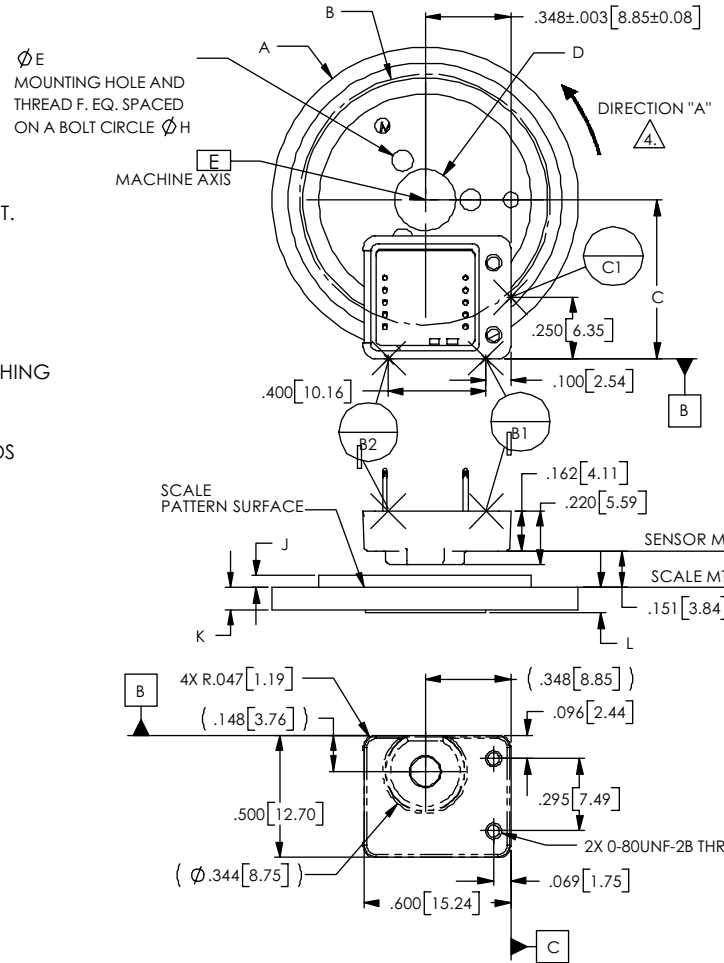
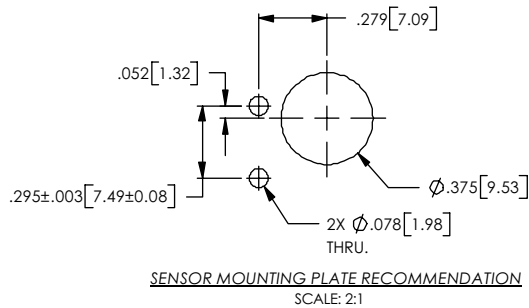
DESCRIPTION:
INTERFACE, ENCODER, 20um,
LONG LINEAR,
MERCURY 1200 SENSOR

SIZE: B	DWG. NO.: ID-00197	REV. F
SCALE: 2:1	CAD FILE:	SHEET 1 OF 1

Mercury 1200 Encoder System Interface Drawing: Rotary Scale without Hub

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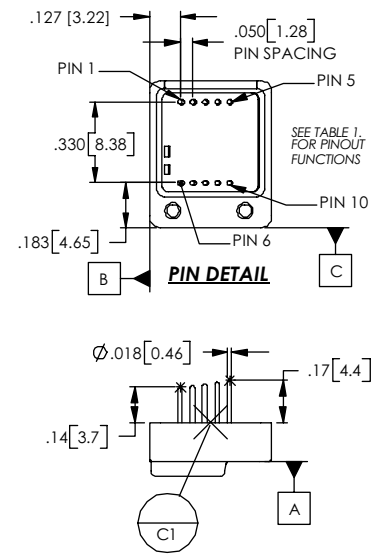
- NOTE:
- IF BENCHING PINS ARE TO BE USED, PINS MUST BE PLACED ALONG DATUM EDGES OF SENSOR FOR PROPER ALIGNMENT. (REFERENCE DATUMS B1, B2 AND C1).
 - HEIGHT OF SENSOR BENCHING PINS MUST BE A MINIMUM OF .162 [4.11] IN HEIGHT FROM DATUM A.
 - RECOMMENDED SENSOR MOUNTING PLATE THICKNESS: ALLOW FOR PLATE THICKNESS AND CLEARANCE OF SCREW HEAD TO SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACES, CLAMPS, HUBS, ETC.)
- ▲ WHEN SCALES MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY READHEAD, OUTPUT SIGNAL COS+ (PIN 3) LEADS OUTPUT SIGNAL SIN+ (PIN 1).



LR	ECO	DESCRIPTION	DATE	APPROVED
A	811	CHANGED SENSOR MTG SURFACE. UPDATED NOTES. ADDED MTG PLATE DETAIL. RELEASE TO PRODUCTION.	6/6/02	MF
B	954	CORRECTED DIMS IN TABLE (DIM D1). MM CONVERSION INCORRECT.	9/29/02	MF
C	960	ADDED PIN SIZE. SNOTOUT DIMS REFERENCE.	9/24/02	MF
D	1094	PIN WAS SQUARE. CHANGE TO ROUND. SEE ECO.	5/19/03	MF
E	1124	UPDATED SCALE TABLE. ADDED HUB I.D. HEIGHT TO R1206. SEE ECO.	6/26/03	MF
F	1159	UPDATED SCALE THICKNESS TOLERANCE IN TABLE (WAS ±.008) SEE ECO.	3/8/04	MF
G	1317	ADD HUB WAS 0.001" ERROR CORRECTION. SEE ECO.	6/28/04	MF
H	1342	TABLE 1. PIN 8 WAS N/C. PIN 9 WAS INDEX WINDOW.	6/2/04	SB

TABLE 1.

Pin	Function
1	SIN+
2	SIN-
3	COS+
4	COS-
5	+5V
6	N/C
7	N/C
8	INDEX WINDOW-
9	INDEX WINDOW+
10	GND



SCALE SIZE AND MOUNTING OPTIONS. DIMENSIONS IN INCHES [MILLIMETERS]

Scale Identification	Counts/Rev	Dim. A Scale O.D.	Scale I.D.	Dim. B Optical Dia.	Dim. C Mounting Dim.	Dim D. Hub I.D.	Dim E. Mounting Hole Dia.	Thread F	Dim H. Bolt Circle	Dim. J Hub Height	Dim. K Scale Thickness	Dim. L Hub Relief
R1206	1,650	0.472 [12.00]	.250+/- .005 [6.35+/- .13]	0.413 [10.50]	0.341+/- .002 [8.66+/- .05]	0.1253+ .0005/- .0000 [3.182+ .013/- .000]	N/A	N/A	N/A	0.040 [1.02]	.036+/- .002 [.91+/- .05]	0.045 [1.14]
R1910	2,500	0.750 [19.05]	.375+/- .005 [9.53+/- .13]	0.627 [15.92]	0.447+/- .002 [11.36+/- .05]	0.1253+ .0005/- .0000 [3.182+ .013/- .000]	0.047 [1.19]	0-80 [6.35]	0.250 [6.35]	0.040 [1.02]	.090+/- .004 [2.29+/- .10]	0.105 [2.67]
R3213	4,096	1.250 [31.75]	.500+/- .005 [12.70+/- .13]	1.027 [26.08]	0.647+/- .002 [16.44+/- .05]	0.2503+ .0005/- .0000 [6.357+ .013/- .000]	0.070 [1.78]	2-56 [9.40]	0.370 [9.40]	0.050 [1.27]	.090+/- .004 [2.29+/- .10]	0.105 [2.67]
R5725	8,192	2.250 [57.15]	1.000+/- .005 [25.40+/- .13]	2.053 [52.15]	1.161+/- .002 [29.48+/- .05]	0.5003+ .0005/- .0000 [12.707+ .013/- .000]	0.136 [3.45]	8-32 [19.05]	0.750 [19.05]	0.060 [1.52]	.090+/- .004 [2.29+/- .10]	0.105 [2.67]
R10851	16,384	4.250 [107.95]	2.000+/- .005 [50.80+/- .13]	4.106 [104.30]	2.187+/- .002 [55.56+/- .05]	1.0003+ .0005/- .0000 [25.408+ .013/- .000]	0.136 [3.45]	8-32 [19.05]	1.375 [34.93]	0.080 [2.03]	.090+/- .004 [2.29+/- .10]	0.105 [2.67]

UNLESS OTHERWISE SPECIFIED

APPROVALS: S.BUTURLIA, DATE: 4/23/01

ALL DIMENSIONS ARE IN INCHES (millimeters). DIM. APPLY AFTER PROCESSING. INTERPRET ALL GEOMETRIC TOLS. PER ANSI Y14.5M-1994

TOLERANCES ARE:
DECIMALS: .XX [X]±.01 [25] .XXX [XX]±.005 [1.3]
ANGULAR: ±30 MIN.

ENGRS: DON GRIMES, DATE: 6/5/02
MGR: J. FARNAM, DATE: 6/6/02
QA: J. FARNAM, DATE: 6/6/02

DESCRIPTION: INTERFACE, ENCODER, 20um, ROTARY w/HUB, MERCURY 1200 SENSOR

SCALE: 2:1 CAD FILE: [Symbol] SHEET 1 OF 1

MicroE Systems

UNITS: .in [mm]